Carlsbad Field Office
OCD Artesia

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 17 2018
RECEIVED

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM054289

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.: 322261

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone

8. Lease Name and Well No.: GARRETT FED COM 226H

2. Name of Operator: MATADOR PRODUCTION COMPANY 228937

9. API Well No.: 30-015-45183

3a. Address: 5400 LBJ Freeway, Suite 1500 Dallas TX 752

3b. Phone No. *(include area code)*: (972)371-5200

10. Field and Pool, or Exploratory: PURPLE-SAGE WOLFCAMP GAS

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: SWNW / 2372 FNL / 584 FWL / LAT 32.1746147 / LONG -104.0132281

At proposed prod. zone: SENE / 2323 FNL / 240 FEL / LAT 32.174688 / LONG -103.998856

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 32 / T24S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*: 5 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 584 feet

16. No. of acres in lease: 80

17. Spacing Unit dedicated to this well: 320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 30 feet

19. Proposed Depth: 10955 feet / 15720 feet

20. BLM/BIA Bond No. on file: FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 2920 feet

22. Approximate date work will start*: 03/01/2018

23. Estimated duration: 90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature: (Electronic Submission)

Name *(Printed/Typed)*: Brian Wood / Ph: (505)466-8120

Date: 01/31/2018

Title: President

Approved by *(Signature)*: (Electronic Submission)

Name *(Printed/Typed)*: Cody Layton / Ph: (575)234-5959

Date: 07/16/2018

Title: Assistant Field Manager Lands & Minerals

Office: CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 07/16/2018

KP 8-17-18

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: SWNW / 2372 FNL / 584 FWL / TWSP: 24S / RANGE: 29E / SECTION: 32 / LAT: 32.1746147 / LONG: -104.0132281 (TVD: 0 feet, MD: 0 feet)
   PPP: SWNE / 2328 FNL / 2460 FEL / TWSP: 24S / RANGE: 29E / SECTION: 32 / LAT: 32.17471 / LONG: -104.00656 (TVD: 10955 feet, MD: 13336 feet)
   PPP: SENW / 2328 FNL / 1320 FWL / TWSP: 24S / RANGE: 29E / SECTION: 32 / LAT: 32.17473 / LONG: -104.010822 (TVD: 10955 feet, MD: 12022 feet)
   PPP: SWNW / 2372 FNL / 584 FWL / TWSP: 24S / RANGE: 29E / SECTION: 32 / LAT: 32.1746147 / LONG: -104.0132281 (TVD: 0 feet, MD: 0 feet)
   BHL: SENE / 2323 FNL / 240 FEL / TWSP: 24S / RANGE: 29E / SECTION: 32 / LAT: 32.174688 / LONG: -103.998856 (TVD: 10955 feet, MD: 15720 feet)

BLM Point of Contact

Name: Judith Yeager
Title: Legal Instruments Examiner
Phone: 5752345936
Email: jyeager@blm.gov

Approval Date: 07/16/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Matador Production Company**
LEASE NO.:	**NMNM-054289**
WELL NAME & NO.:	**Garrett Fed Com 226H**
SURFACE HOLE FOOTAGE:	**2372' FNL & 0584' FWL**
BOTTOM HOLE FOOTAGE	**2323' FNL & 0240' FEL**
LOCATION:	**Section 24, T. 29 S., R 32 E., NMPM**
COUNTY:	**County, New Mexico**

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☐ **Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**

2. **Hydrogen Sulfide has been reported as a hazard, but no measurements have been recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, report measurements and formations to the BLM.**

3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

4. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

5. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Medium Cave/Karst
Possibility of water flows in the Castile and Salado.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.
Abnormal pressure maybe encountered when penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

1. The **13-3/8** inch surface casing shall be set at approximately **610** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

If cement does not circulate to surface on the intermediate casing, the cement on the 7-5/8 X 7 casing must come to surface.

3. The minimum required fill of cement behind the **7-5/8 X 7** inch intermediate casing is:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

4. The minimum required fill of cement behind the **5-1/2 X 4-1/2** inch production casing is:

☐ Cement as proposed by operator. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

BOP Option #1:

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** 1st intermediate casing shoe shall be psi.

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8 X 7** intermediate casing shoe shall be psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

BOP Option #2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.

a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
c. **Manufacturer representative shall install the test plug for the initial BOP test.**
d. **Operator shall perform the 9-5/8" and 7-5/8 X 7" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.**
e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

[redacted]

Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7-5/8 X 7 casing shoe shall be psi.

a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
c. **Manufacturer representative shall install the test plug for the initial BOP test.**
d. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

6. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

b. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

c. The results of the test shall be reported to the appropriate BLM office.

d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

f. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 071618

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
LEASE NO.:	NMNM054289
WELL NAME & NO.:	Garrett Fed Com 226H
SURFACE HOLE FOOTAGE:	2372'/N & 584'/W
BOTTOM HOLE FOOTAGE	2323'/N & 240'/E
LOCATION:	Section 32, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:
Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.
Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Hydrology:
The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Following proper procedures for crossing fence lines including bracing and tying off on both sides of road passageways through fences with H-braces prior to cutting the fence, would mitigate the impacts to fence. The operator would notify the New Mexico State Land Office private surface landowners, and grazing allotment holders prior to crossing any fences.

Any damage to fences, cattle guards, windmills, and pipelines or structures that provide water to livestock during construction, throughout the life of the project, and caused by its operation, must be immediately corrected by the Applicant. The Applicant must notify the New Mexico State Land Office, grazing allottee or the private surface landowner and the BLM-CFO (575-234-5972) if any damage occurs to windmills, tanks, pipelines or structures that provide water to livestock.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

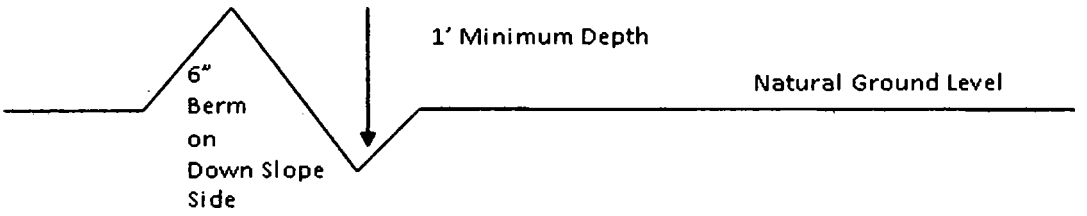
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

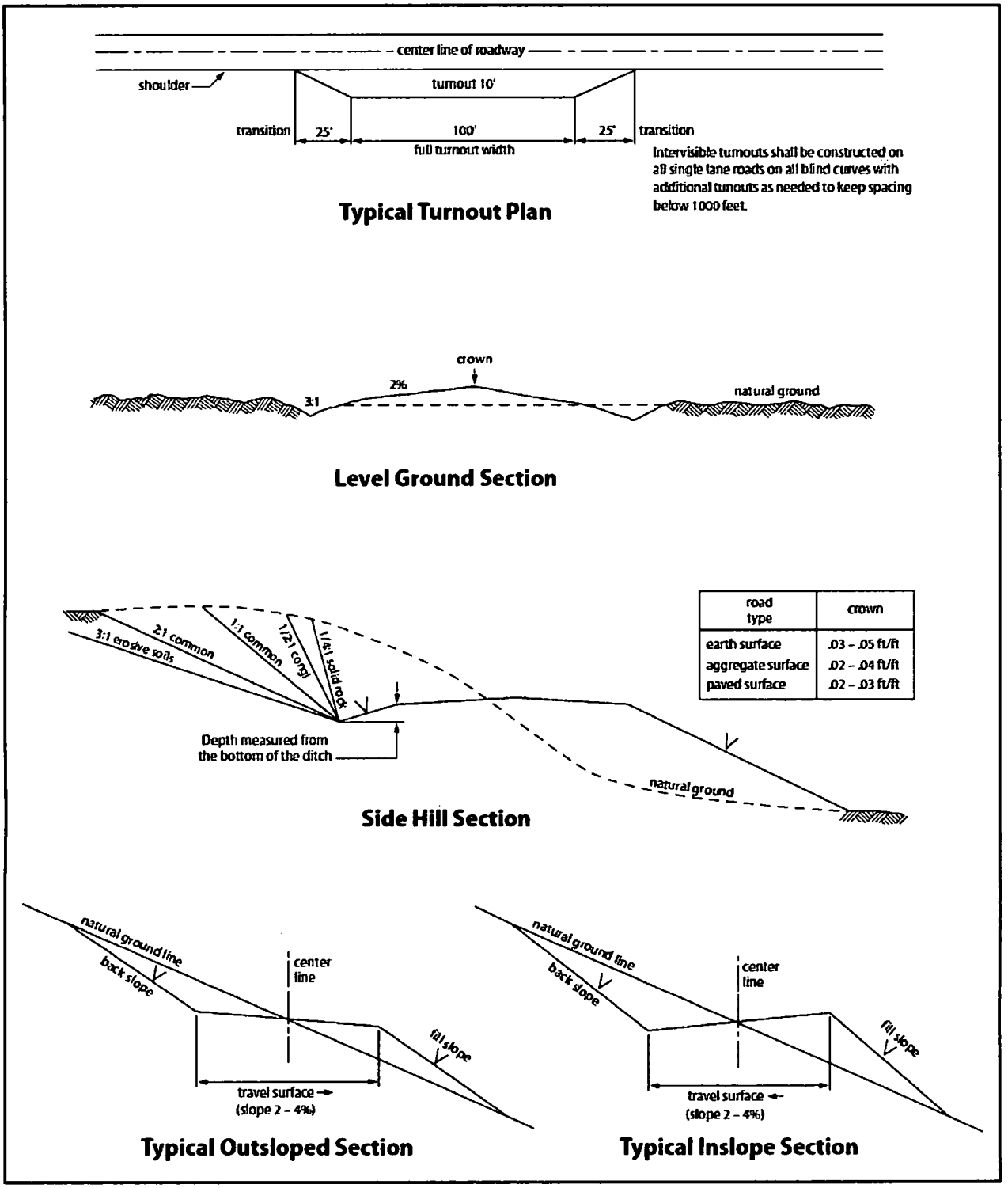


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

(X) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
LEASE NO.:	NMNM054289
WELL NAME & NO.:	Garrett Fed Com 226H
SURFACE HOLE FOOTAGE:	2372'/N & 584'/W
BOTTOM HOLE FOOTAGE	2323'/N & 240'/E
LOCATION:	Section 32, T.24 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:
Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.
Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Hydrology:
The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Following proper procedures for crossing fence lines including bracing and tying off on both sides of road passageways through fences with H-braces prior to cutting the fence, would mitigate the impacts to fence. The operator would notify the New Mexico State Land Office private surface landowners, and grazing allotment holders prior to crossing any fences.

Any damage to fences, cattle guards, windmills, and pipelines or structures that provide water to livestock during construction, throughout the life of the project, and caused by its operation, must be immediately corrected by the Applicant. The Applicant must notify the New Mexico State Land Office, grazing allottee or the private surface landowner and the BLM-CFO (575-234-5972) if any damage occurs to windmills, tanks, pipelines or structures that provide water to livestock.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

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Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

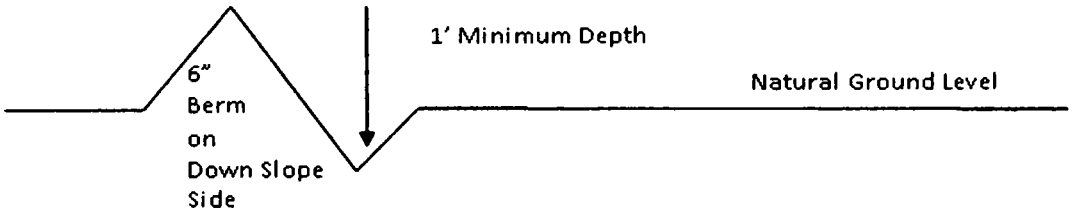
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

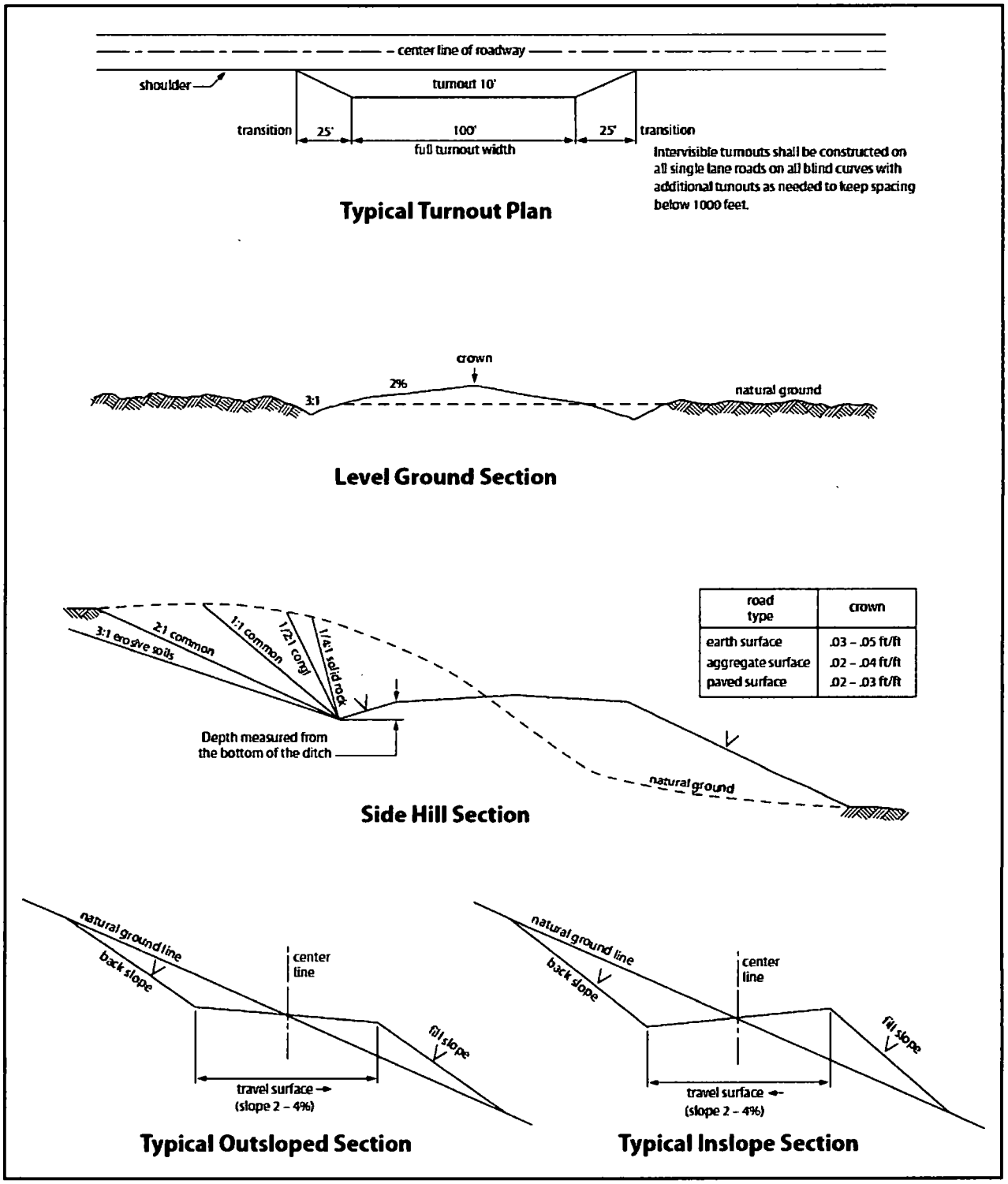


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

(X) seed mixture 1	( ) seed mixture 3
( ) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

07/19/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Brian Wood **Signed on:** 01/31/2018

Title: President

Street Address: 37 Verano Loop

City: Santa Fe **State:** NM **Zip:** 87508

Phone: (505)466-8120

Email address: afmss@permitswest.com

Field Representative

Representative Name: Sam Pryor

Street Address: 5400 LBJ Freeway, Suite 1500

City: Dallas **State:** TX **Zip:** 75240

Phone: (972)371-5241

Email address:

APD ID: 10400026769 **Submission Date:** 01/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - General

APD ID: 10400026769 **Tie to previous NOS?** **Submission Date:** 01/31/2018

BLM Office: CARLSBAD **User:** Brian Wood **Title:** President

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM054289 **Lease Acres:** 80

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES **APD Operator:** MATADOR PRODUCTION COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

Operator PO Box:

Operator City: Dallas **State:** TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: GARRETT FED COM **Well Number:** 226H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PURPLE-SAGE WOLFCAMP GAS **Pool Name:**

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** GARRETT FED COM **Number:** 122H

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 5 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 584 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Garrett_226H_Plat_20180131083959.pdf

Well work start Date: 03/01/2018 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 18329

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	2372	FNL	584	FWL	24S	29E	32	Aliquot SWNW	32.1746147	-104.0132281	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	2920	0	0
KOP Leg #1	2372	FNL	584	FWL	24S	29E	32	Aliquot SWNW	32.1746147	-104.0132281	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-7456	10412	10376
PPP Leg #1	2372	FNL	584	FWL	24S	29E	32	Aliquot SWNW	32.1746147	-104.0132281	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	2920	0	0

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
PPP Leg #1	2328	FNL	1320	FWL	24S	29E	32	Aliquot SENW	32.17473	-104.010822	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 054289	-8035	12022	10955
PPP Leg #1	2328	FNL	2460	FEL	24S	29E	32	Aliquot SWNE	32.17471	-104.00656	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-8035	13336	10955
EXIT Leg #1	2323	FNL	240	FEL	24S	29E	32	Aliquot SENE	32.174688	-103.998856	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-8035	15720	10955
BHL Leg #1	2323	FNL	240	FEL	24S	29E	32	Aliquot SENE	32.174688	-103.998856	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-8035	15720	10955

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint, but determined to be impractical, to reduce the amount of gas flared.

- Power Generation – On lease
  - Operating a generator will only utilize a portion of the produced gas and the remainder of gas would still need to be flared.
  - Power generation also requires an agreement with a power company that is willing to purchase the gas. The terms of any such agreement typically require a long-term commitment from the operator at certain and steady deliverables. With gas decline rates and the unpredictability of markets, it is impracticable for the operator to agree to a long-term commitment because as the wells decline the operator would be burdened with penalties for failure to meet the deliverables.
- Compressed Natural Gas – On lease
  - Compressed Natural Gas is likely to be uneconomic to operate when the gas volume declines.
- NGL Removal – On lease
  - NGL Removal requires a plant and is expensive on such a small scale rendering it uneconomic and still requires residue gas to be flared.

APD ID: 10400026769 **Submission Date:** 01/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	2921	0	0	OTHER : CALICHE	USEABLE WATER	No
2	RUSTLER ANHYDRITE	2892	29	29		USEABLE WATER	No
3	TOP SALT	2521	400	400		NONE	No
4	CASTILE	1699	1222	1225	ANHYDRITE	NONE	No
5	BASE OF SALT	126	2795	2813		NONE	No
6	BELL CANYON	72	2849	2868	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-840	3761	3788	SANDSTONE	NATURAL GAS,OIL	No
8	BRUSHY CANYON	-2007	4928	4963	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING	-3648	6569	6615	LIMESTONE	NATURAL GAS,OIL	No
10	BONE SPRING 1ST	-4436	7357	7393	OTHER : CARBONATE	NATURAL GAS,OIL	No
11	BONE SPRING 1ST	-4603	7524	7560	LIMESTONE,SANDSTONE	NATURAL GAS,OIL	No
12	BONE SPRING 2ND	-4869	7790	7826	OTHER : CARBONATE	NATURAL GAS,OIL	No
13	BONE SPRING 2ND	-5373	8294	8330	SANDSTONE	NATURAL GAS,OIL	Yes
14	BONE SPRING 3RD	-5719	8640	8676	OTHER : Carbonate	NATURAL GAS,CO2,OIL	No
15	BONE SPRING 3RD	-6461	9382	9418	SANDSTONE	NATURAL GAS,CO2,OIL	No
16	WOLFCAMP	-6822	9743	9779	OTHER : A Carbonate	NATURAL GAS,CO2,OIL	No
17	WOLFCAMP	-7282	10203	10239	OTHER : B Carbonate	NATURAL GAS,CO2,OIL	Yes

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 12000

Equipment: A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attached BOP, choke manifold, co-flex hose, and speed head diagrams. An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Requesting Variance? YES

Variance request: Matador requests a variance to have the option of running a speed head for setting the intermediate 1 and 2 strings. In the case of running a speed head with landing mandrel for 9.625" and 7" casing, a minimum 3M BOPE system will be installed after surface casing is set. BOP test pressures will be 250 psi low and 3000 psi high. Annular will be tested to 250 psi low and 2500 psi high before drilling below the surface shoe. After 7" casing is set in the speed head, the BOP will then be lifted to install another casing head section for setting the production casing. Matador will nipple up the casing head and BOP and a minimum 5M BOPE system will be installed. Pressure tests will be made to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 2500 psi high. A diagram of the speed head is attached. Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

Testing Procedure: Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. A third-party company will test the BOPs. After setting the surface casing, and before drilling the surface casing shoe, a minimum 2M BOPE system will be installed. It will be tested to 250 psi low and 2000 psi high. Annular will be tested to 250 psi low and 1000 psi high. After setting intermediate 1 casing, a minimum 3M BOPE system will be installed and tested to 250 psi low and 3000 psi high. Annular will be tested to 250 psi low and 2500 psi high. After setting intermediate 2 casing, a minimum 5M BOPE system will be installed and tested to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 2500 psi high.

Choke Diagram Attachment:

Garrett_226H_Choke_20180131090253.pdf

BOP Diagram Attachment:

Garrett_226H_BOP_20180131090308.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	610	0	610	2920		610	J-55	54.5	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	2600	0	2584			2600	P-110	29.7	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2900	0	2881			2900	J-55	40	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
4	PRODUCTION	6.125	5.5	NEW	API	Y	0	10200	0	10164			10200	P-110	20	OTHER - BTC/TXP	1.125	1.125	DRY	1.8	DRY	1.8
5	INTERMEDIATE	8.75	7.625	NEW	API	Y	2600	10300	2584	10264			7700	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	DRY	1.8	DRY	1.8
6	INTERMEDIATE	8.75	7.0	NEW	API	Y	10300	11212	10264	10940			912	P-110	29	OTHER - BTC	1.125	1.125	DRY	1.8	DRY	1.8
7	PRODUCTION	6.125	4.5	NEW	API	Y	10200	15720	10164	10955			5520	P-110	13.5	OTHER - BTC/TXP	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131090833.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Garrett_226H_Casing_Design_Assumptions_20180131091921.pdf

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131091315.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Casing Attachments

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131091207.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Garrett_226H_5.5in_Specs_20180131092007.pdf

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131092031.pdf

Casing ID: 5 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Garrett_226H_7.625in_Specs_20180131091524.pdf

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131091541.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Casing Attachments

Casing ID: 6 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Garrett_226H_Casing_Design_Assumptions_20180131091832.pdf

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131092150.pdf

Casing ID: 7 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Garrett_226H_4.5in_Specs_20180131092110.pdf

Casing Design Assumptions and Worksheet(s):

Garrett_226H_Casing_Design_Assumptions_20180131092127.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	610	268	1.82	12.8	487	100	CLASS C	BENTONITE + 2% CaCl2 + 3% NaCl + LCM
SURFACE	Tail		0	610	352	1.38	14.8	485	100	CLASS C	5% NaCl + LCM
INTERMEDIATE	Lead		0	2600	700	2.13	12.6	1491	60	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Tail		0	2600	225	1.38	14.8	310	60	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Lead		0	2900	638	2.13	12.6	1358	100	CLASS C	BENTONITE + 1% CaCl2 + 8% NaCl +

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											LCM
INTERMEDIATE	Tail		0	2900	202	1.38	14.8	278	100	CLASS C	5% NaCl + LCM
PRODUCTION	Lead		0	10200	530	1.17	15.8	620	25	Class H	FLUID LOSS + DISPERSANT + RETARDER + LCM
PRODUCTION	Tail		0	10200	530	1.17	15.8	620	25	Class H	FLUID LOSS + DISPERSANT + RETARDER + LCM
INTERMEDIATE	Lead		2600	10300	700	2.13	12.6	1491	60	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Tail		2600	10300	225	1.38	14.8	310	60	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Lead		10300	11212	700	2.13	12.6	1491	60	TXI	fluid loss + dispersant + retarder + LCM
INTERMEDIATE	Tail		10300	11212	225	1.38	14.8	310	60	TXI	fluid loss + dispersant + retarder + LCM
PRODUCTION	Lead		10200	15720	530	1.17	15.8	620	25	Class H	fluid loss + dispersant + retarder + LCM
PRODUCTION	Tail		10200	15720	530	1.17	15.8	620	25	Class H	fluid loss + dispersant + retarder + LCM

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 1 will be used.

Circulating Medium Table

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
11212	15720	OIL-BASED MUD	12.5	12.5							
610	2900	OTHER : BRINE WATER	10	10							
0	610	SPUD MUD	8.3	8.3							
2900	11212	OTHER : FRESH WATER + CUT BRINE	9	9							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

A 2-person mud logging program will be used from 11,200 MD to TD.
No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

List of open and cased hole logs run in the well:

CBL,GR,MWD

Coring operation description for the well:

No core is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7000 **Anticipated Surface Pressure:** 4589.89

Anticipated Bottom Hole Temperature(F): 170

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Garrett_226H_H2S_Plan_20180131093056.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

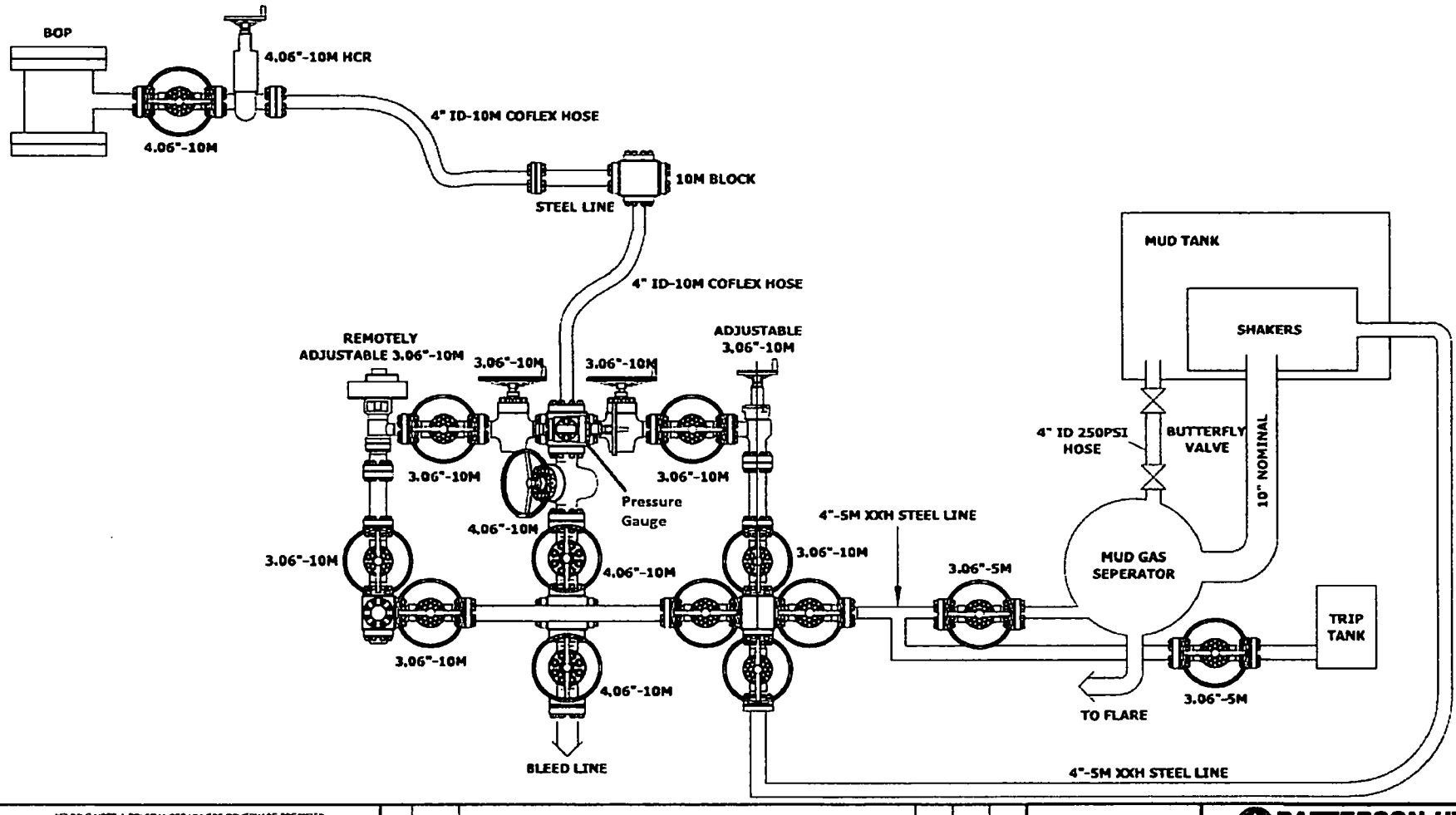
Garrett_226H_Horizontal_Drill_Plan_20180131093125.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Garrett_226H_Speedhead_Specs_20180131093146.pdf
Garrett_226H_General_Drill_Plan_20180517082047.pdf

Other Variance attachment:



WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

GENERAL WELDING NOTE:
ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINUOUS 45 DEGREE FILLET WELDS, WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS. WELDMENT TOLERANCES ± 1/16

MACHINED TOLERANCES
1 PLACE DECIMAL ± 0.1
2 PLACE DECIMAL ± 0.03
3 PLACE DECIMAL ± 0.015
FRACTIONAL TOLERANCES ± 1/64
MISC MACHINED CORNER RADII ± .031
CHAMFER OUTSIDE DIAMETERS .03 X 45 DEG
ANGLE TOLERANCES ± 1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS ARE IN INCHES

REV	DATE	DESCRIPTION	DRWN BY	CHK BY	APPVD ENG.
02	8-8-15	ISSUED FOR INFORMATION	CP	CSL	
01	7-8-15	ISSUED FOR INFORMATION	CSL		

PATTERSON-UTI DRILLING COMPANY LLC

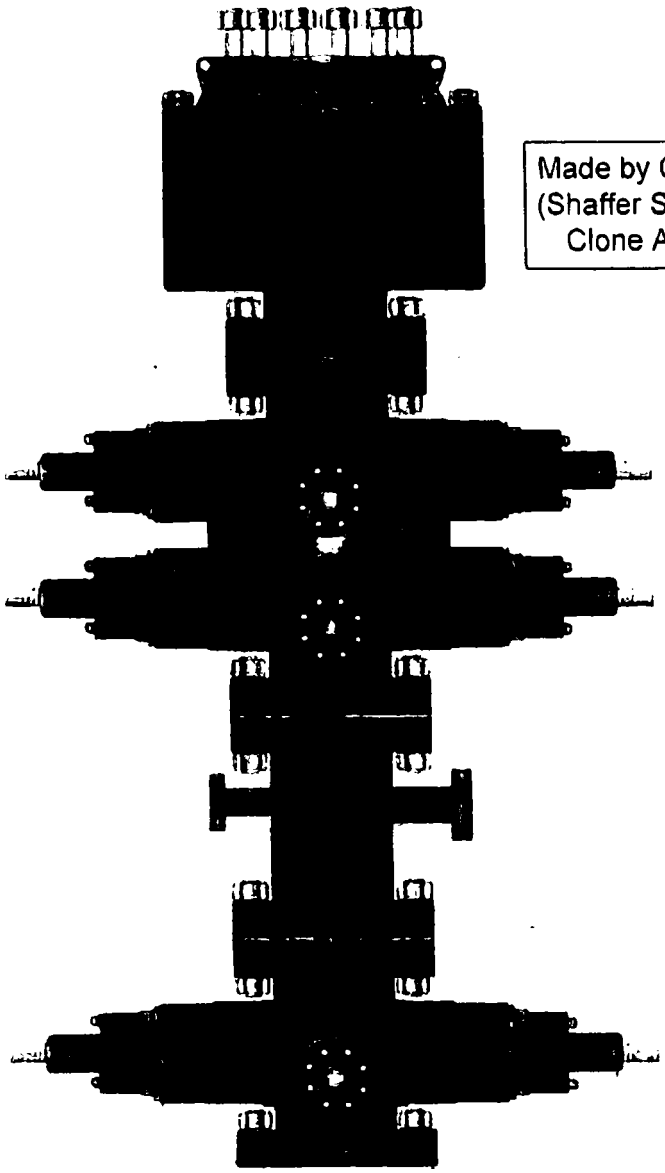
CHOKE MANIFOLD

10M CHOKE ARRANGEMENT
RIG 237

DRLG No. R0297-D.001.LAY.09

PATTERSON-UTI
Well Control

RIG: 297



Made by Cameron
(Shaffer Spherical)
Clone Annular

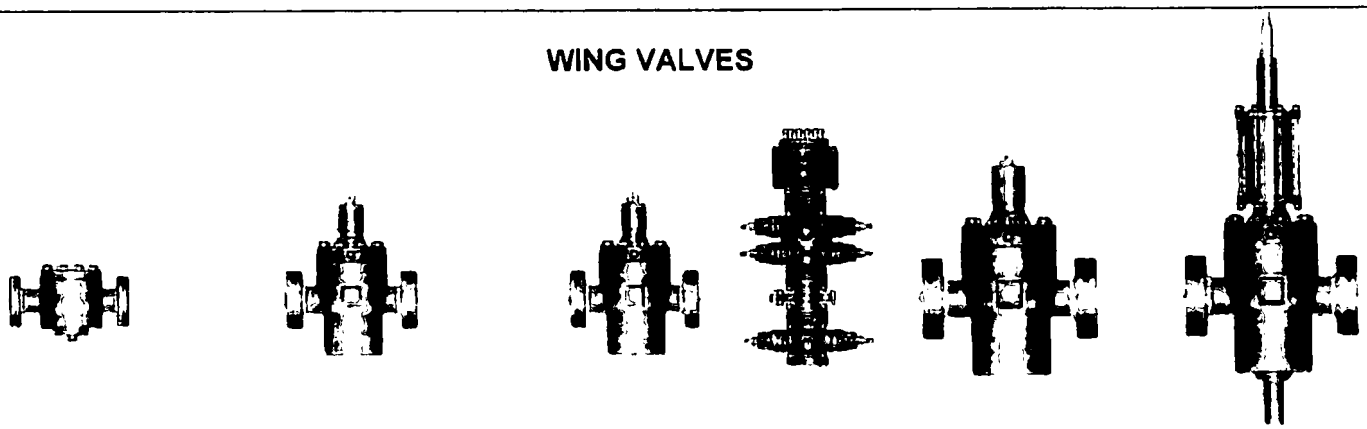
PATTERSON-UTI # PS2-628
STYLE: New Shaffer Spherical
BORE 13 5/8" PRESSURE 5,000
HEIGHT: 48 ½" WEIGHT: 13,800 lbs

PATTERSON-UTI # PC2-128
STYLE: New Cameron Type U
BORE 13 5/8" PRESSURE 10,000
RAMS: TOP 5" Pipe BTM Blinds
HEIGHT: 66 5/8" WEIGHT: 24,000 lbs

Length 40" Outlets 4" 10M
DSA 4" 10M x 2" 10M

PATTERSON-UTI # PC2-228
STYLE: New Cameron Type U
BORE 13 5/8" PRESSURE 10,000
RAMS: 5" Pipe
HEIGHT: 41 5/8" WEIGHT: 13,000 lbs

WING VALVES



2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

December 8, 2014

Customer: Patterson

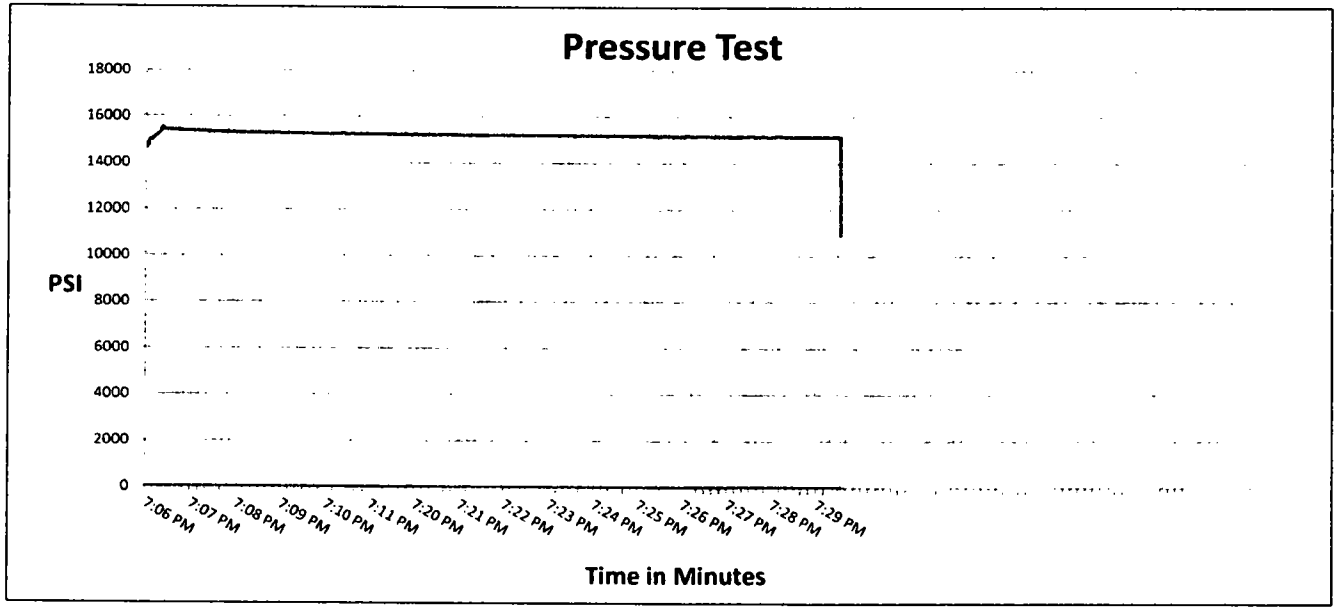
Pick Ticket #: 284918

Hose Specifications

Hose Type	Length
Ck	10'
I.D.	**O.D.**
3"	4.79"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4-1/16 10K	Swage
Die Size	**Final O.D.**
5.37"	5.37"
Hose Serial #	**Hose Assembly Serial #**
10490	284918-2



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 2/4 Minutes		15732 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Tyler Hill*

Approved By: *Ryan Adams*

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-2	Hose O.D. (Inches)	5.30"
Hose Assembly Length	10'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	91996	Stem (Heat #)	91996
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.
Test Pressure Hold Time (minutes)	15 1/2	

Date Tested	Tested By	Approved By
12/8/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

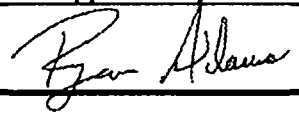
Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-2**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	**12/9/2014**

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

Pick Ticket #: 284918

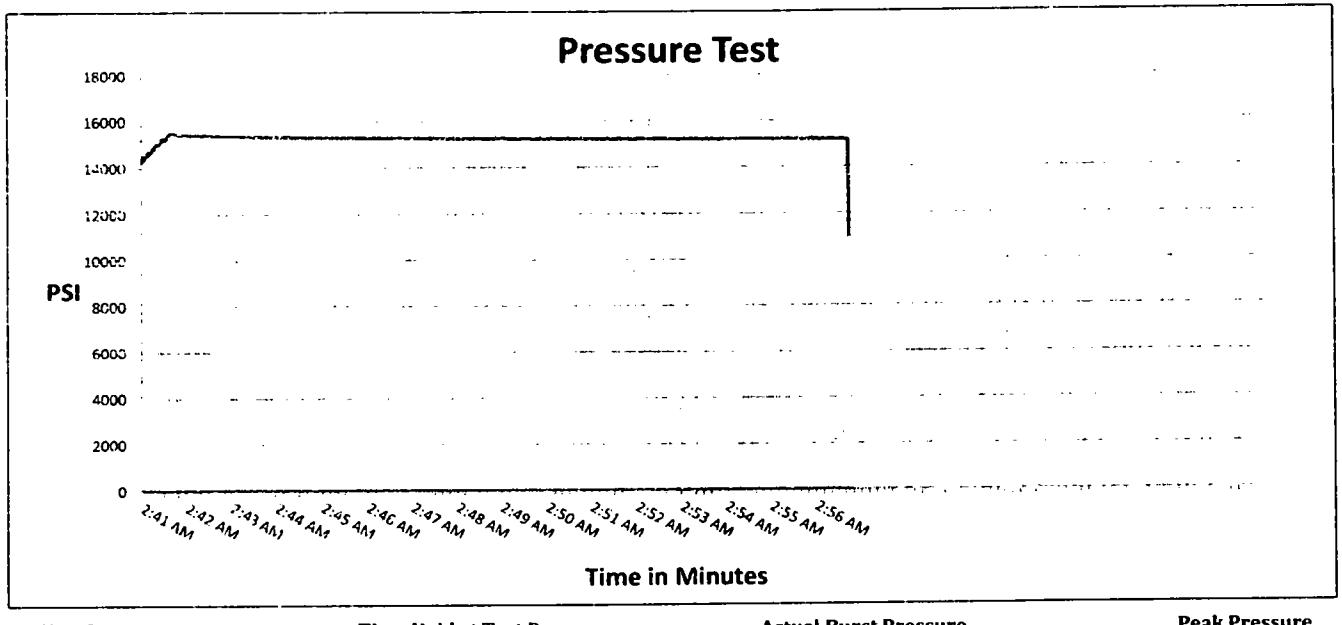
R294

Hose Specifications

Hose Type	Length
Ck	20'
I.D.	**O.D.**
3"	4.77"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4-1/16 10K	Swage
Die Size	**Final O.D.**
5.37"	5.40"
Hose Serial #	**Hose Assembly Serial #**
10490	284918-1



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 2/4 Minutes		15893 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Tyler Hill*

x

Approved By: *Ryan Adams*

x

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	**PATTERSON B&E**	*Hose Assembly Type*	**Choke & Kill**
MWH Sales Representative	**AMY WHITE**	*Certification*	**API 7K**
Date Assembled	**12/8/2014**	*Hose Grade*	**MUD**
Location Assembled	**OKC**	*Hose Working Pressure*	**10000**
Sales Order #	**236404**	*Hose Lot # and Date Code*	**10490-01/13**
Customer Purchase Order #	**260471**	*Hose I.D. (Inches)*	**3"**
Assembly Serial # (Pick Ticket #)	**287918-1**	*Hose O.D. (Inches)*	**5.30"**
Hose Assembly Length	**20'**	*Armor (yes/no)*	YES

Fittings			
End A		**End B**	
Stem (Part and Revision #)	**R3.0X64WB**	*Stem (Part and Revision #)*	**R3.0X64WB**
Stem (Heat #)	**A141420**	*Stem (Heat #)*	**A141420**
Ferrule (Part and Revision #)	**RF3.0**	*Ferrule (Part and Revision #)*	**RF3.0**
Ferrule (Heat #)	**37DA5631**	*Ferrule (Heat #)*	**37DA5631**
Connection (Part #)	**4 1/16 10K**	*Connection (Part #)*	**4 1/16 10K**
Connection (Heat #)	**V3579**	*Connection (Heat #)*	**V3579**
Dies Used	**5.37**	*Dies Used*	**5.37**

Hydrostatic Test Requirements		
Test Pressure (psi)	**15,000**	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	**15 1/2**	

Date Tested	*Tested By*	*Approved By*
12/9/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

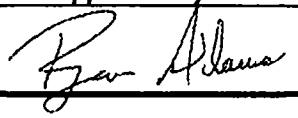
Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-1**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	**12/9/2014**

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

December 9, 2014

Customer: Patterson

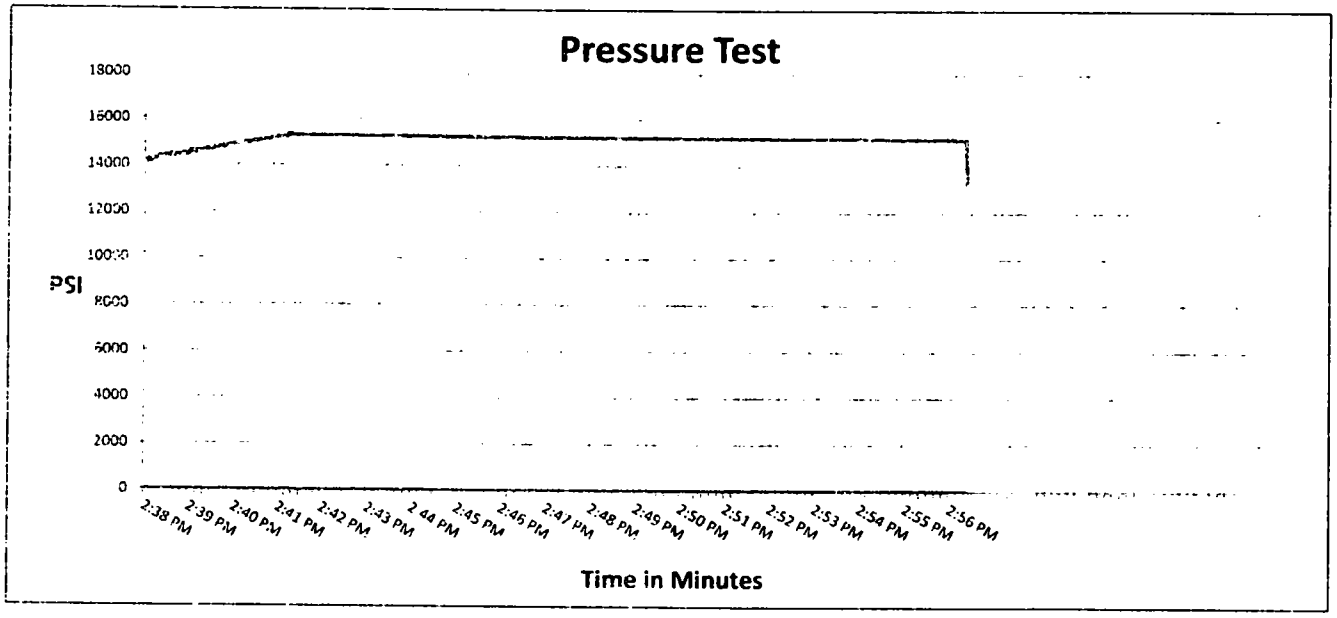
Pick Ticket #: 284918

Hose Specifications

Hose Type	Length
Mud	70'
I.D.	**O.D.**
3"	4.79"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	**Final O.D.**
5.37"	5.37"
Hose Serial #	**Hose Assembly Serial #**
10490	284918-3



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	16 3/4 Minutes		15410 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Tyler Hill*

Approved By: *Ryan Adams*

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PATTERSON B&E	Hose Assembly Type	Choke & Kill
MWH Sales Representative	AMY WHITE	Certification	API 7K
Date Assembled	12/8/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	236404	Hose Lot # and Date Code	10490-01/13
Customer Purchase Order #	260471	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	287918-3	Hose O.D. (Inches)	5.23"
Hose Assembly Length	70'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	A141420	Stem (Heat #)	A141420
Ferrule (Port and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	37DA5631	Ferrule (Heat #)	37DA5631
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37	Dies Used	5.37

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	***Hose assembly was tested with ambient water temperature.***
Test Pressure Hold Time (minutes)	16 3/4	

Date Tested	Tested By	Approved By
12/9/2014		

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: **PATTERSON B&E**	*Customer P.O.#* **260471**
Sales Order # **236404**	*Date Assembled:* **12/8/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**287918-3**	*Hose Lot # and Date Code*	**10490-01/13**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	*Date*
	12/9/2014

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

For the latest performance data, always visit our website: www.tenaris.com

December 31 2015

Tenaris

Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 4.500 in.
Wall: 0.290 in.
Weight: 13.50 lbs/ft
Grade: P110-ICY
Min. Wall Thickness: 87.5 %

Nominal OD	4.500 in.	Nominal Weight	13.50 lbs/ft	Standard Drift Diameter	3.795 in.
Nominal ID	3.920 in.	Wall Thickness	0.290 in.	Special Drift Diameter	N/A
Plain End Weight	13.05 lbs/ft				

Body Yield Strength	479 x 1000 lbs	Internal Yield	14100 psi	SMYS	125000 psi
Collapse	11620 psi				

Connection OD	5.000 in.	Coupling Length	9.075 in.	Connection ID	3.908 in.
Critical Section Area	3.836 sq. in.	Threads per in.	5.00	Make-Up Loss	4.016 in.

Tension Efficiency	100 %	Joint Yield Strength	479 x 1000 lbs	Internal Pressure Capacity[1]	14100 psi
Structural Compression Efficiency	100 %	Structural Compression Strength	479 x 1000 lbs	Structural Bending[2]	127 °/100 ft
External Pressure Capacity	11620 psi				

Minimum	6950 ft-lbs	Optimum	7720 ft-lbs	Maximum	8490 ft-lbs

Operating Torque	10500 ft-lbs	Yield Torque	12200 ft-lbs		

Blanking Dimensions

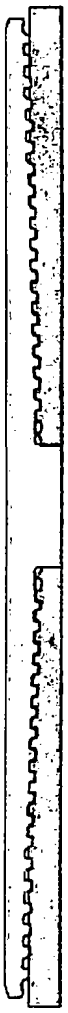
For the latest performance data, always visit our website: www.tenaris.com

July 15 2015

Tenaris

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR



PIPE BODY DATA

GEOMETRY

Nominal OD	**5.500** in.	Nominal Weight	**20.00** lbs/ft	Standard Drift Diameter	**4.653** in.
Nominal ID	**4.778** in.	Wall Thickness	**0.361** in.	Special Drift Diameter	**N/A**
Plain End Weight	**19.83** lbs/ft				

PERFORMANCE

Body Yield Strength	**641** x 1000 lbs	Internal Yield	**12630** psi	SMYS	**110000** psi
Collapse	**12100** psi				

TENARISXP™ BTC CONNECTION DATA

GEOMETRY

Connection OD	**6.100** in.	Coupling Length	**9.450** in.	Connection ID	**4.766** in.
Critical Section Area	**5.828** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**641** x 1000 lbs	Internal Pressure Capacity[1]	**12630** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**641** x 1000 lbs	Structural Bending[2]	**92** °/100 ft
External Pressure Capacity	**12100** psi				

ESTIMATED MAKE-UP TORQUES[3]

Minimum	**11270** ft-lbs	Optimum	**12520** ft-lbs	Maximum	**13770** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**21500** ft-lbs	Yield Torque	**23900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

DATA ARE INFORMATIVE ONLY.
BASED ON SI_PD-101836 P&B

VAM® HTF-NR

Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

CONNECTION PROPERTIES	
Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	619 klb
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

TORQUE VALUES	
Min. Make-up torque	9 600 ft.lb
Opti. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahea on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.

Do you need help on this product? - Remember no one knows VAM® like VAM®

canada@vamfieldservice.com *uk@vamfieldservice.com* *china@vamfieldservice.com*
usa@vamfieldservice.com *dubai@vamfieldservice.com* *baku@vamfieldservice.com*
mexico@vamfieldservice.com *nigeria@vamfieldservice.com* *singapore@vamfieldservice.com*
brazil@vamfieldservice.com *angola@vamfieldservice.com* *australia@vamfieldservice.com*

Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group

vallourec

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_c=1.125

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- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_c=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_c=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
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Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

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Intermediate #2 Casing

Collapse: DF_c=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
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- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
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- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

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- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
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Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

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Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Hydrogen Sulfide Drilling Operations Plan

1 H2S safety instructions covering:

- Characteristics of H2S
- Physical effects & hazards
- Principal and operation of H2S detectors, warning system, and briefing areas
- Evacuation procedures, routes, and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors will be located on the drilling rig floor, in the base of the sub structure / cellar area, and on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary.
- An audio alarm system will be installed on the derrick floor and in the doghouse.

3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area will be high enough to be visible.
- Windsocks on the rig floor and top of doghouse will be high enough to be visible.

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
    - Green Flag – Normal Safe Operation Condition
    - Yellow Flag – Potential Pressure and Danger
    - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See APD

6 Communications:

- While working under masks, chalkboards will be used for communications.
- Hand signals will be used where chalk board is inappropriate.
- Two-way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.

7 Drill Stem Testing:

- No DST or cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubulars good and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

11 Emergency Contacts

- See next page

H2S Contingency Plan Emergency Contacts
Matador Production Company
Garrett Fed Com wells, Eddy County, NM

Company Office			
Matador Production Company	(972)-371-5200		
Key Personnel			
Name	**Title**	**Office**	**Mobile**
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Gary Martin	Drilling Superintendent		601-669-1774
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Adam Lange	Drilling Engineer	972-371-5247	214-458-0788

Artesia	
Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283
Carlsbad	
Ambulance	911
State Police	575-885-3137
Loving City Police	575-745-3511
Sheriff's Office	575-887-7551
Malaga Fire Department	575-745-2317
Local Emergency Planning Committee	575-885-3581
Santa Fe	
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National	
Carlsbad BLM	575-234-5972
National Emergency Response Center (Washington, D.C.)	800-424-8802
Medical	
Flight for Life- 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare- R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM	505-842-4433
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-3356
Halliburton	575-746-2757	
B.J. Services	575-746-3569	

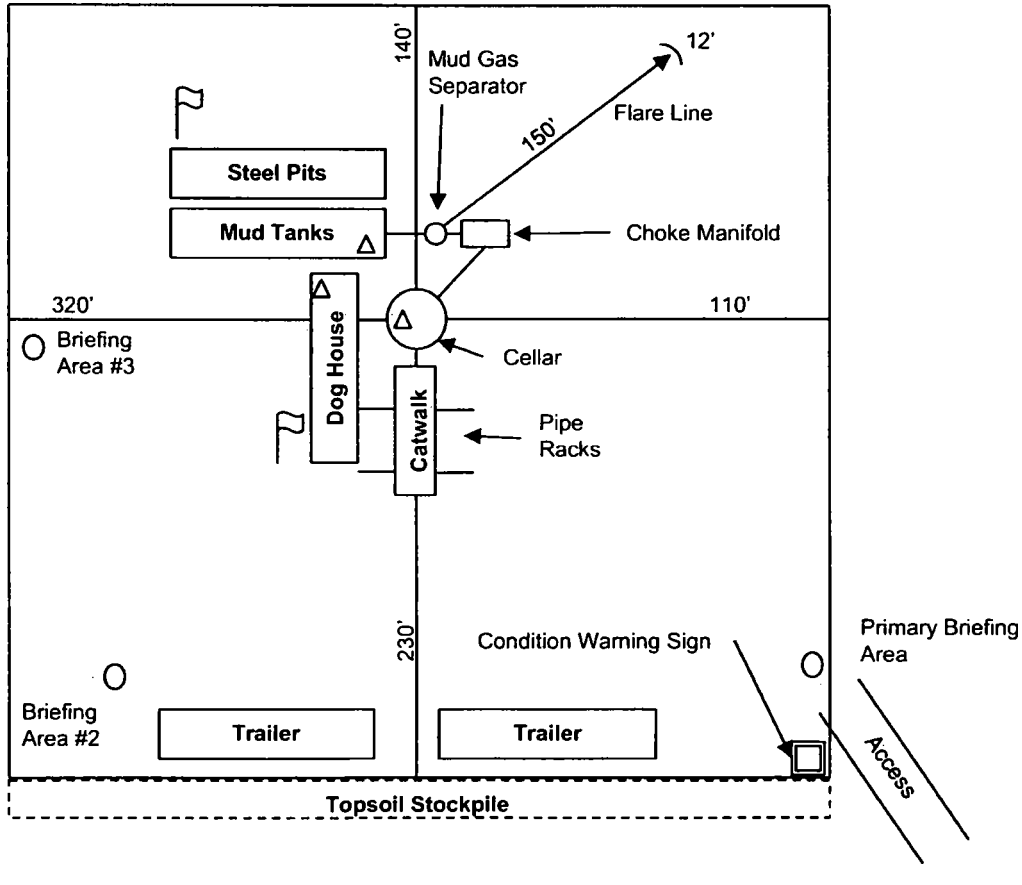
H2S Rig Diagram

Garrett Fed Com 226H
SHL 2372' FNL & 584' FWL
32-24S-29E Eddy County, NM
(not to scale)

Wind Direction Indicator

H2S Monitors

Briefing Areas

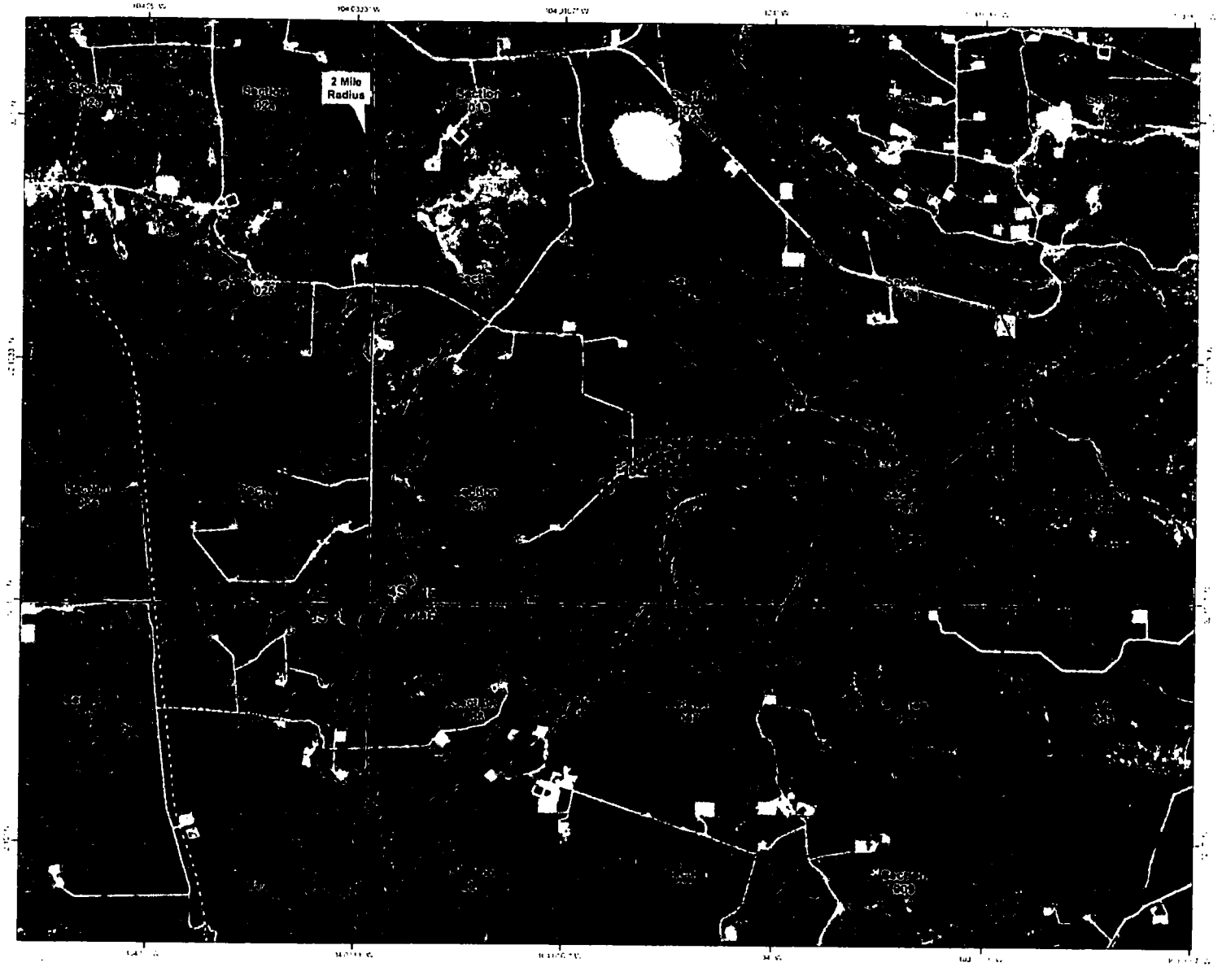


Prevailing Winds → North

Matador Production Company

Garrett Fed Com #226H
H_2S Contingency Plan:
2 Mile Radius Map

Section 32, Township 24S, Range 29E
Eddy County, New Mexico



Surface Hole Location

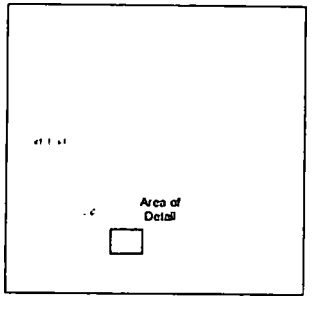
1:27,000
0 0.25 0.5 1
Miles

N

NAD 1983 New Mexico State Plane East FIPS 3001 Feet

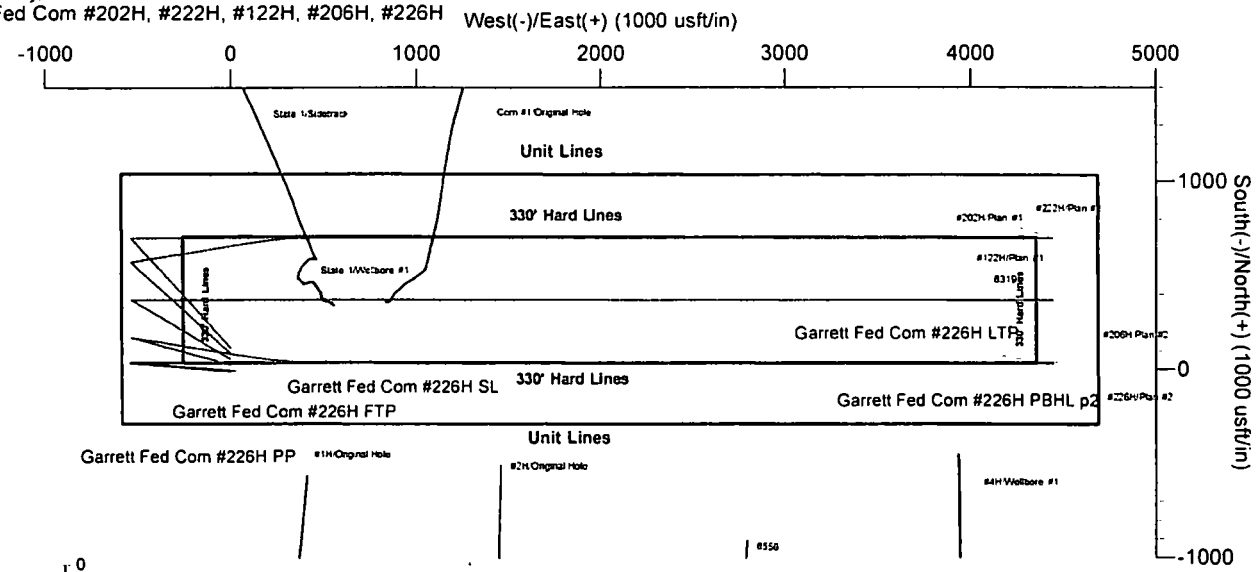
PERMITS WEST, ...

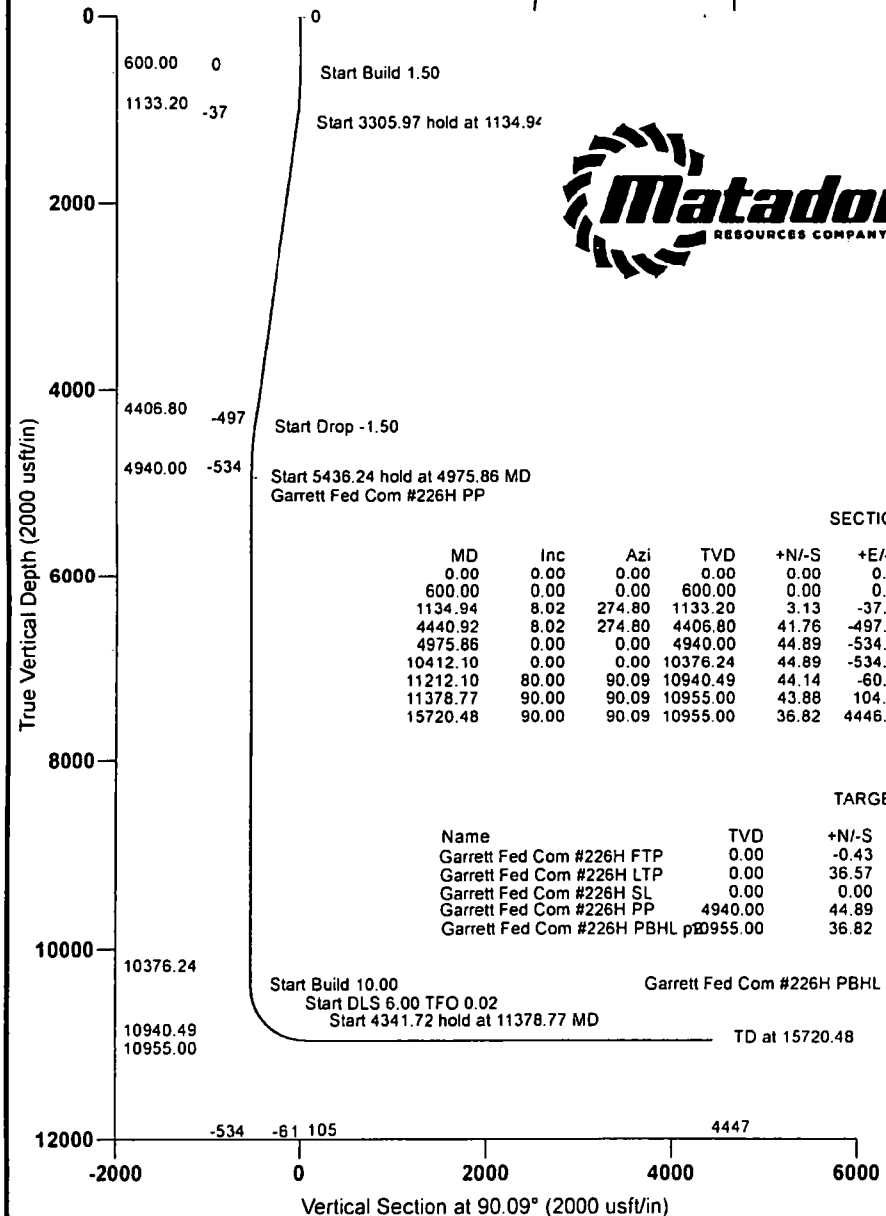
Prepared by Permits West, Inc., December 15, 2017 for Matador Production Company



MATADOR RESOURCES

Project: Eddy County, New Mexico
Site: Garrett Fed Com #202H, #222H, #122H, #206H, #226H
Well: #226H
Wellbore: Lateral
Design: Plan #2





Azimuths to Grid North
True North: -0.17°
Magnetic North: 6.93°

Magnetic Field
Strength: 48078.6snT
Dip Angle: 59.95°
Date: 9/28/2017
Model: HDGM

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
1134.94	8.02	274.80	1133.20	3.13	-37.27	1.50	274.80	-37.27	
4440.92	8.02	274.80	4406.80	41.76	-497.13	0.00	0.00	-497.20	
4975.86	0.00	0.00	4940.00	44.89	-534.40	1.50	180.00	-534.47	Garrett Fed Com #226H PP
10412.10	0.00	0.00	10376.24	44.89	-534.40	0.00	0.00	-534.47	
11212.10	80.00	90.09	10940.49	44.14	-60.93	10.00	90.09	-61.00	
11378.77	90.00	90.09	10955.00	43.88	104.89	6.00	0.02	104.82	
15720.48	90.00	90.09	10955.00	36.82	4446.60	0.00	0.00	4446.53	Garrett Fed Com #226H PBHL p2

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Garrett Fed Com #226H FTP	0.00	-0.43	0.21	427348.00	599194.00	Point
Garrett Fed Com #226H LTP	0.00	36.57	4356.21	427385.00	603550.00	Point
Garrett Fed Com #226H SL	0.00	0.00	0.00	427348.43	599193.79	Point
Garrett Fed Com #226H PP	4940.00	44.89	-534.40	427393.31	598659.40	Point
Garrett Fed Com #226H PBHL p2	10955.00	36.82	4446.60	427385.24	603640.39	Point

Plan: Plan #2 (#226H/Lateral)
Created By: RDW
Date: 13:44, October 04 2017

PREMIER DIRECTIONAL DRILLING
363 N Sam Houston Pwky E, Ste 300 Houston, TX 77060
Phone: 281-673-4000

MATADOR RESOURCES

Project: Eddy County, New Mexico
Site: Garrett Fed Com #202H, #222H, #122H, #206H, #226H
Well: #226H
Wellbore: Lateral
Design: Plan #2

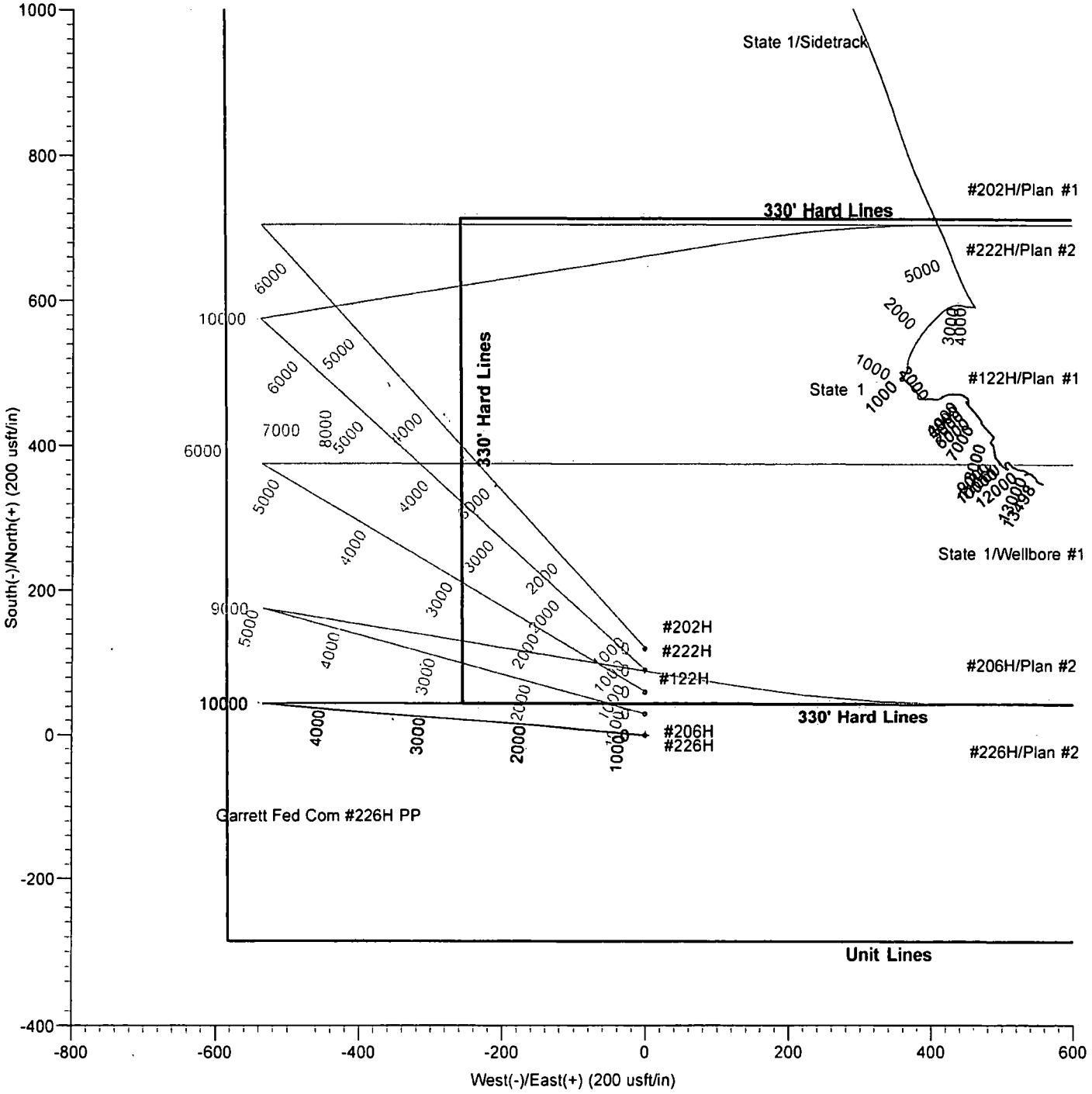
SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
#122H	60.08	-0.04	427408.51	599193.75
#202H	120.01	0.00	427468.43	599193.79
#206H	29.97	-0.02	427378.40	599193.77
#222H	90.01	-0.04	427438.43	599193.76
#226H	0.00	0.00	427348.43	599193.79

T G M

Azimuths to Grid North
True North: -0.17°
Magnetic North: 6.93°

Magnetic Field
Strength: 48078.6snT
Dip Angle: 59.95°
Date: 9/28/2017
Model: HDGM



Plan: Plan #2 (#226H/Lateral)
Created By: RDW
Date: 13:47, October 04 2017

PREMIER DIRECTIONAL DRILLING
363 N Sam Houston Pkwy Houston, TX 77060
Phone: 281-673-4000

PREMIER DIRECTIONAL DRILLING

PDD
Planning Report

Database:	EDM 5000 14 Multi User	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Company:	MATADOR RESOURCES	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Project:	Eddy County, New Mexico	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**North Reference:**	Grid
Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Project	Eddy County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Garrett Fed Com #202H, #222H, #122H, #206H, #226H				
Site Position:		**Northing:**	427,468.43 usft	**Latitude:**	32° 10' 29.36 N
From:	Map	**Easting:**	599,193.80 usft	**Longitude:**	104° 0' 45.86 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.17 °

Well	#226H - Slot #226H				
Well Position	**+N/-S**	-120.01 usft	**Northing:**	427,348.43 usft	**Latitude:**	32° 10' 28.17 N
	+E/-W	0.00 usft	**Easting:**	599,193.80 usft	**Longitude:**	104° 0' 45.86 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	2,920.00 usft

Wellbore	Lateral				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	9/28/2017	7.10	59.95	48,079

Design	Plan #2				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	90.09	

Plan Survey Tool Program **Date** 10/4/2017

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,720.48	Plan #2 (Lateral)	MWD+HDGM	
				OWSG MWD + HDGM	

Database:	EDM 5000 14 Multi User	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Company:	MATADOR RESOURCES	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Project:	Eddy County, New Mexico	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**North Reference:**	Grid
Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,134.94	8.02	274.80	1,133.20	3.13	-37.27	1.50	1.50	0.00	274.80	
4,440.92	8.02	274.80	4,406.80	41.76	-497.13	0.00	0.00	0.00	0.00	
4,975.86	0.00	0.00	4,940.00	44.89	-534.40	1.50	-1.50	0.00	180.00	Garrett Fed Com #2
10,412.10	0.00	0.00	10,376.24	44.89	-534.40	0.00	0.00	0.00	0.00	
11,212.10	80.00	90.09	10,940.49	44.14	-60.93	10.00	10.00	0.00	90.09	
11,378.77	90.00	90.09	10,955.00	43.88	104.89	6.00	6.00	0.00	0.02	
15,720.48	90.00	90.09	10,955.00	36.82	4,446.60	0.00	0.00	0.00	0.00	Garrett Fed Com #2

PDD
Planning Report

Database:	EDM 5000 14 Multi User	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Company:	MATADOR RESOURCES	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Project:	Eddy County, New Mexico	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**North Reference:**	Grid
Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	1.50	274.80	699.99	0.11	-1.30	-1.30	1.50	1.50	0.00
800.00	3.00	274.80	799.91	0.44	-5.22	-5.22	1.50	1.50	0.00
900.00	4.50	274.80	899.69	0.99	-11.73	-11.74	1.50	1.50	0.00
1,000.00	6.00	274.80	999.27	1.75	-20.85	-20.85	1.50	1.50	0.00
1,100.00	7.50	274.80	1,098.57	2.74	-32.56	-32.57	1.50	1.50	0.00
1,134.94	8.02	274.80	1,133.20	3.13	-37.27	-37.27	1.50	1.50	0.00
1,200.00	8.02	274.80	1,197.62	3.89	-46.32	-46.32	0.00	0.00	0.00
1,300.00	8.02	274.80	1,296.64	5.06	-60.23	-60.23	0.00	0.00	0.00
1,400.00	8.02	274.80	1,395.66	6.23	-74.14	-74.15	0.00	0.00	0.00
1,500.00	8.02	274.80	1,494.68	7.40	-88.05	-88.06	0.00	0.00	0.00
1,600.00	8.02	274.80	1,593.70	8.56	-101.96	-101.97	0.00	0.00	0.00
1,700.00	8.02	274.80	1,692.72	9.73	-115.87	-115.88	0.00	0.00	0.00
1,800.00	8.02	274.80	1,791.74	10.90	-129.78	-129.79	0.00	0.00	0.00
1,900.00	8.02	274.80	1,890.76	12.07	-143.69	-143.71	0.00	0.00	0.00
2,000.00	8.02	274.80	1,989.78	13.24	-157.60	-157.62	0.00	0.00	0.00
2,100.00	8.02	274.80	2,088.80	14.41	-171.51	-171.53	0.00	0.00	0.00
2,200.00	8.02	274.80	2,187.83	15.57	-185.42	-185.44	0.00	0.00	0.00
2,300.00	8.02	274.80	2,286.85	16.74	-199.33	-199.35	0.00	0.00	0.00
2,400.00	8.02	274.80	2,385.87	17.91	-213.24	-213.27	0.00	0.00	0.00
2,500.00	8.02	274.80	2,484.89	19.08	-227.15	-227.18	0.00	0.00	0.00
2,600.00	8.02	274.80	2,583.91	20.25	-241.06	-241.09	0.00	0.00	0.00
2,700.00	8.02	274.80	2,682.93	21.42	-254.97	-255.00	0.00	0.00	0.00
2,800.00	8.02	274.80	2,781.95	22.58	-268.88	-268.91	0.00	0.00	0.00
2,900.00	8.02	274.80	2,880.97	23.75	-282.79	-282.82	0.00	0.00	0.00
3,000.00	8.02	274.80	2,979.99	24.92	-296.70	-296.74	0.00	0.00	0.00
3,100.00	8.02	274.80	3,079.01	26.09	-310.61	-310.65	0.00	0.00	0.00
3,200.00	8.02	274.80	3,178.03	27.26	-324.52	-324.56	0.00	0.00	0.00
3,300.00	8.02	274.80	3,277.06	28.43	-338.43	-338.47	0.00	0.00	0.00
3,400.00	8.02	274.80	3,376.08	29.59	-352.34	-352.38	0.00	0.00	0.00
3,500.00	8.02	274.80	3,475.10	30.76	-366.25	-366.30	0.00	0.00	0.00
3,600.00	8.02	274.80	3,574.12	31.93	-380.16	-380.21	0.00	0.00	0.00
3,700.00	8.02	274.80	3,673.14	33.10	-394.07	-394.12	0.00	0.00	0.00
3,800.00	8.02	274.80	3,772.16	34.27	-407.98	-408.03	0.00	0.00	0.00
3,900.00	8.02	274.80	3,871.18	35.44	-421.89	-421.94	0.00	0.00	0.00
4,000.00	8.02	274.80	3,970.20	36.60	-435.80	-435.86	0.00	0.00	0.00
4,100.00	8.02	274.80	4,069.22	37.77	-449.71	-449.77	0.00	0.00	0.00
4,200.00	8.02	274.80	4,168.24	38.94	-463.62	-463.68	0.00	0.00	0.00
4,300.00	8.02	274.80	4,267.26	40.11	-477.53	-477.59	0.00	0.00	0.00
4,400.00	8.02	274.80	4,366.29	41.28	-491.44	-491.50	0.00	0.00	0.00
4,440.92	8.02	274.80	4,406.80	41.76	-497.13	-497.20	0.00	0.00	0.00
4,500.00	7.14	274.80	4,465.37	42.41	-504.90	-504.96	1.50	-1.50	0.00
4,600.00	5.64	274.80	4,564.74	43.34	-515.99	-516.05	1.50	-1.50	0.00
4,700.00	4.14	274.80	4,664.38	44.05	-524.48	-524.54	1.50	-1.50	0.00
4,800.00	2.64	274.80	4,764.20	44.55	-530.36	-530.43	1.50	-1.50	0.00
4,900.00	1.14	274.80	4,864.14	44.82	-533.65	-533.72	1.50	-1.50	0.00
4,975.86	0.00	0.00	4,940.00	44.89	-534.40	-534.47	1.50	-1.50	0.00

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Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	0.00	0.00	4,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,100.00	0.00	0.00	5,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,200.00	0.00	0.00	5,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,300.00	0.00	0.00	5,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,400.00	0.00	0.00	5,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,500.00	0.00	0.00	5,464.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,600.00	0.00	0.00	5,564.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,700.00	0.00	0.00	5,664.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,800.00	0.00	0.00	5,764.14	44.89	-534.40	-534.47	0.00	0.00	0.00
5,900.00	0.00	0.00	5,864.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,000.00	0.00	0.00	5,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,100.00	0.00	0.00	6,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,200.00	0.00	0.00	6,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,300.00	0.00	0.00	6,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,400.00	0.00	0.00	6,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,500.00	0.00	0.00	6,464.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,600.00	0.00	0.00	6,564.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,700.00	0.00	0.00	6,664.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,800.00	0.00	0.00	6,764.14	44.89	-534.40	-534.47	0.00	0.00	0.00
6,900.00	0.00	0.00	6,864.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,000.00	0.00	0.00	6,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,100.00	0.00	0.00	7,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,200.00	0.00	0.00	7,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,300.00	0.00	0.00	7,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,400.00	0.00	0.00	7,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,500.00	0.00	0.00	7,464.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,600.00	0.00	0.00	7,564.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,700.00	0.00	0.00	7,664.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,800.00	0.00	0.00	7,764.14	44.89	-534.40	-534.47	0.00	0.00	0.00
7,900.00	0.00	0.00	7,864.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,000.00	0.00	0.00	7,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,100.00	0.00	0.00	8,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,200.00	0.00	0.00	8,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,300.00	0.00	0.00	8,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,400.00	0.00	0.00	8,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,500.00	0.00	0.00	8,464.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,600.00	0.00	0.00	8,564.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,700.00	0.00	0.00	8,664.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,800.00	0.00	0.00	8,764.14	44.89	-534.40	-534.47	0.00	0.00	0.00
8,900.00	0.00	0.00	8,864.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,000.00	0.00	0.00	8,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,100.00	0.00	0.00	9,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,200.00	0.00	0.00	9,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,300.00	0.00	0.00	9,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,400.00	0.00	0.00	9,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,500.00	0.00	0.00	9,464.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,600.00	0.00	0.00	9,564.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,700.00	0.00	0.00	9,664.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,800.00	0.00	0.00	9,764.14	44.89	-534.40	-534.47	0.00	0.00	0.00
9,900.00	0.00	0.00	9,864.14	44.89	-534.40	-534.47	0.00	0.00	0.00
10,000.00	0.00	0.00	9,964.14	44.89	-534.40	-534.47	0.00	0.00	0.00
10,100.00	0.00	0.00	10,064.14	44.89	-534.40	-534.47	0.00	0.00	0.00
10,200.00	0.00	0.00	10,164.14	44.89	-534.40	-534.47	0.00	0.00	0.00

Database:	EDM 5000 14 Multi User	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Company:	MATADOR RESOURCES	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Project:	Eddy County, New Mexico	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**North Reference:**	Grid
Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,300.00	0.00	0.00	10,264.14	44.89	-534.40	-534.47	0.00	0.00	0.00
10,400.00	0.00	0.00	10,364.14	44.89	-534.40	-534.47	0.00	0.00	0.00
10,412.10	0.00	0.00	10,376.24	44.89	-534.40	-534.47	0.00	0.00	0.00
10,450.00	3.79	90.09	10,414.11	44.88	-533.14	-533.21	10.00	10.00	0.00
10,500.00	8.79	90.09	10,463.79	44.87	-527.67	-527.74	10.00	10.00	0.00
10,550.00	13.79	90.09	10,512.81	44.86	-517.88	-517.95	10.00	10.00	0.00
10,600.00	18.79	90.09	10,560.79	44.84	-503.86	-503.93	10.00	10.00	0.00
10,650.00	23.79	90.09	10,607.36	44.81	-485.71	-485.78	10.00	10.00	0.00
10,700.00	28.79	90.09	10,652.18	44.77	-463.58	-463.65	10.00	10.00	0.00
10,750.00	33.79	90.09	10,694.89	44.73	-437.62	-437.69	10.00	10.00	0.00
10,800.00	38.79	90.09	10,735.18	44.69	-408.03	-408.10	10.00	10.00	0.00
10,850.00	43.79	90.09	10,772.74	44.63	-375.05	-375.12	10.00	10.00	0.00
10,900.00	48.79	90.09	10,807.27	44.58	-338.92	-338.99	10.00	10.00	0.00
10,950.00	53.79	90.09	10,838.53	44.52	-299.91	-299.98	10.00	10.00	0.00
11,000.00	58.79	90.09	10,866.27	44.45	-258.33	-258.40	10.00	10.00	0.00
11,050.00	63.79	90.09	10,890.29	44.38	-214.50	-214.56	10.00	10.00	0.00
11,100.00	68.79	90.09	10,910.39	44.31	-168.73	-168.80	10.00	10.00	0.00
11,150.00	73.79	90.09	10,926.42	44.24	-121.39	-121.46	10.00	10.00	0.00
11,200.00	78.79	90.09	10,938.27	44.16	-72.83	-72.90	10.00	10.00	0.00
11,212.10	80.00	90.09	10,940.49	44.14	-60.93	-61.00	10.00	10.00	0.00
11,250.00	82.27	90.09	10,946.33	44.08	-23.49	-23.56	6.00	6.00	0.00
11,300.00	85.27	90.09	10,951.75	44.00	26.21	26.14	6.00	6.00	0.00
11,350.00	88.27	90.09	10,954.57	43.92	76.12	76.06	6.00	6.00	0.00
11,378.77	90.00	90.09	10,955.00	43.88	104.89	104.82	6.00	6.00	0.00
11,400.00	90.00	90.09	10,955.00	43.84	126.12	126.05	0.00	0.00	0.00
11,500.00	90.00	90.09	10,955.00	43.68	226.12	226.05	0.00	0.00	0.00
11,600.00	90.00	90.09	10,955.00	43.52	326.12	326.05	0.00	0.00	0.00
11,700.00	90.00	90.09	10,955.00	43.35	426.12	426.05	0.00	0.00	0.00
11,800.00	90.00	90.09	10,955.00	43.19	526.12	526.05	0.00	0.00	0.00
11,900.00	90.00	90.09	10,955.00	43.03	626.12	626.05	0.00	0.00	0.00
12,000.00	90.00	90.09	10,955.00	42.87	726.12	726.05	0.00	0.00	0.00
12,100.00	90.00	90.09	10,955.00	42.70	826.12	826.05	0.00	0.00	0.00
12,200.00	90.00	90.09	10,955.00	42.54	926.12	926.05	0.00	0.00	0.00
12,300.00	90.00	90.09	10,955.00	42.38	1,026.12	1,026.05	0.00	0.00	0.00
12,400.00	90.00	90.09	10,955.00	42.22	1,126.12	1,126.05	0.00	0.00	0.00
12,500.00	90.00	90.09	10,955.00	42.05	1,226.12	1,226.05	0.00	0.00	0.00
12,600.00	90.00	90.09	10,955.00	41.89	1,326.12	1,326.05	0.00	0.00	0.00
12,700.00	90.00	90.09	10,955.00	41.73	1,426.12	1,426.05	0.00	0.00	0.00
12,800.00	90.00	90.09	10,955.00	41.57	1,526.12	1,526.05	0.00	0.00	0.00
12,900.00	90.00	90.09	10,955.00	41.40	1,626.12	1,626.05	0.00	0.00	0.00
13,000.00	90.00	90.09	10,955.00	41.24	1,726.12	1,726.05	0.00	0.00	0.00
13,100.00	90.00	90.09	10,955.00	41.08	1,826.12	1,826.05	0.00	0.00	0.00
13,200.00	90.00	90.09	10,955.00	40.91	1,926.12	1,926.05	0.00	0.00	0.00
13,300.00	90.00	90.09	10,955.00	40.75	2,026.12	2,026.05	0.00	0.00	0.00
13,400.00	90.00	90.09	10,955.00	40.59	2,126.12	2,126.05	0.00	0.00	0.00
13,500.00	90.00	90.09	10,955.00	40.43	2,226.12	2,226.05	0.00	0.00	0.00
13,600.00	90.00	90.09	10,955.00	40.26	2,326.12	2,326.05	0.00	0.00	0.00
13,700.00	90.00	90.09	10,955.00	40.10	2,426.12	2,426.05	0.00	0.00	0.00
13,800.00	90.00	90.09	10,955.00	39.94	2,526.12	2,526.05	0.00	0.00	0.00
13,900.00	90.00	90.09	10,955.00	39.78	2,626.12	2,626.05	0.00	0.00	0.00
14,000.00	90.00	90.09	10,955.00	39.61	2,726.12	2,726.05	0.00	0.00	0.00
14,100.00	90.00	90.09	10,955.00	39.45	2,826.12	2,826.05	0.00	0.00	0.00
14,200.00	90.00	90.09	10,955.00	39.29	2,926.12	2,926.05	0.00	0.00	0.00

Database:	EDM 5000 14 Multi User	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Company:	MATADOR RESOURCES	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Project:	Eddy County, New Mexico	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**North Reference:**	Grid
Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,300.00	90.00	90.09	10,955.00	39.13	3,026.12	3,026.05	0.00	0.00	0.00
14,400.00	90.00	90.09	10,955.00	38.96	3,126.12	3,126.05	0.00	0.00	0.00
14,500.00	90.00	90.09	10,955.00	38.80	3,226.12	3,226.05	0.00	0.00	0.00
14,600.00	90.00	90.09	10,955.00	38.64	3,326.12	3,326.05	0.00	0.00	0.00
14,700.00	90.00	90.09	10,955.00	38.48	3,426.12	3,426.05	0.00	0.00	0.00
14,800.00	90.00	90.09	10,955.00	38.31	3,526.12	3,526.05	0.00	0.00	0.00
14,900.00	90.00	90.09	10,955.00	38.15	3,626.12	3,626.05	0.00	0.00	0.00
15,000.00	90.00	90.09	10,955.00	37.99	3,726.12	3,726.05	0.00	0.00	0.00
15,100.00	90.00	90.09	10,955.00	37.82	3,826.12	3,826.05	0.00	0.00	0.00
15,200.00	90.00	90.09	10,955.00	37.66	3,926.12	3,926.05	0.00	0.00	0.00
15,300.00	90.00	90.09	10,955.00	37.50	4,026.11	4,026.05	0.00	0.00	0.00
15,400.00	90.00	90.09	10,955.00	37.34	4,126.11	4,126.05	0.00	0.00	0.00
15,500.00	90.00	90.09	10,955.00	37.17	4,226.11	4,226.05	0.00	0.00	0.00
15,600.00	90.00	90.09	10,955.00	37.01	4,326.11	4,326.05	0.00	0.00	0.00
15,700.00	90.00	90.09	10,955.00	36.85	4,426.11	4,426.05	0.00	0.00	0.00
15,720.48	90.00	90.09	10,955.00	36.82	4,446.60	4,446.53	0.00	0.00	0.00

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 us	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/4/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	15,720.48	Plan #2 (Lateral)	MWD+HDGM	OWSG MWD + HDGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Amethyst State #1 (OFFSET)						
State 1 - Sidetrack - Sidetrack	100.00	71.90	609.67	609.42	2,371.357	CC
State 1 - Sidetrack - Sidetrack	600.00	568.60	610.71	606.95	162.180	ES
State 1 - Sidetrack - Sidetrack	3,500.00	3,442.84	994.49	969.70	40.120	SF
State 1 - Wellbore #1 - Wellbore #1	11,785.69	10,941.67	331.92	247.24	3.920	CC, ES
State 1 - Wellbore #1 - Wellbore #1	11,800.00	10,942.03	332.23	247.36	3.914	SF
Corral Canyon Fed Com Pad (OFFSET)						
#1H - Original Hole - Original Hole						Out of range
#2H - Original Hole - Original Hole						Out of range
#3H - Original Hole - Original Hole						Out of range
#4H - Wellbore #1 - Wellbore #1						Out of range
Emerald State Com #1 (OFFSET)						
Com #1 - Original Hole - Original Hole	333.65	331.17	916.27	914.30	463.813	CC
Com #1 - Original Hole - Original Hole	500.00	492.28	916.70	913.55	291.011	ES
Com #1 - Original Hole - Original Hole	1,300.00	1,271.24	988.81	980.07	113.112	SF
Garrett Fed Com #202H, #222H, #122H, #206H, #226H						
#122H - Lateral - Plan #1	600.00	600.00	60.08	56.24	15.643	CC
#122H - Lateral - Plan #1	700.00	699.21	60.63	56.09	13.344	ES
#122H - Lateral - Plan #1	8,000.00	7,996.94	332.16	273.81	5.692	SF
#202H - Lateral - Plan #1	600.00	600.00	120.01	116.17	31.243	CC, ES
#202H - Lateral - Plan #1	9,600.00	9,594.12	664.16	594.58	9.546	SF
#206H - Lateral - Plan #2	600.00	600.00	29.97	26.13	7.804	CC
#206H - Lateral - Plan #2	700.00	699.79	30.21	25.66	6.648	ES
#206H - Lateral - Plan #2	9,456.06	9,458.42	128.36	60.07	1.880	SF
#222H - Lateral - Plan #2	600.00	600.00	90.01	86.17	23.433	CC, ES
#222H - Lateral - Plan #2	15,720.48	15,711.79	660.33	375.44	2.318	SF

Offset Design Amethyst State #1 (OFFSET) - State 1 - Sidetrack - Sidetrack — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD STANDARD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Amethyst State #1 (OFFSET) - State 1 - Sidetrack - Sidetrack — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD STANDARD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	27.50	0.00	0.00	36.26	491.60	360.54	610.26				
100.00	100.00	71.90	99.40	0.13	0.13	36.25	491.66	360.51	609.67	609.42	0.26	2,371.357	CC
200.00	200.00	171.89	199.39	0.49	0.44	36.23	491.86	360.44	609.79	608.87	0.92	660.270	
300.00	300.00	271.91	299.41	0.85	0.79	36.22	492.01	360.39	609.88	608.24	1.64	372.076	
400.00	400.00	370.81	398.31	1.20	1.15	36.22	492.15	360.47	610.04	607.70	2.35	259.707	
500.00	500.00	471.00	498.50	1.56	1.50	36.22	492.37	360.68	610.35	607.28	3.06	199.352	
600.00	600.00	568.60	596.10	1.92	1.85	36.23	492.59	360.98	610.71	606.95	3.77	162.180	ES
700.00	699.99	665.26	692.75	2.27	2.19	121.53	493.21	361.64	612.32	607.86	4.46	137.262	
800.00	799.91	760.56	788.04	2.62	2.53	121.79	494.31	362.58	615.89	610.74	5.15	119.607	
900.00	899.69	856.95	884.40	2.97	2.88	122.19	496.19	363.71	621.63	615.78	5.85	106.321	
1,000.00	999.27	955.21	982.63	3.33	3.23	122.76	498.43	364.94	629.13	622.58	6.56	95.962	
1,100.00	1,098.57	1,053.40	1,080.79	3.70	3.58	123.48	500.78	366.26	638.30	631.03	7.27	87.790	
1,134.94	1,133.20	1,087.56	1,114.93	3.83	3.70	123.77	501.63	366.74	641.91	634.39	7.52	85.338	
1,200.00	1,197.62	1,148.73	1,176.08	4.08	3.92	124.36	503.39	367.53	649.02	641.04	7.98	81.329	
1,300.00	1,296.64	1,243.75	1,271.01	4.46	4.26	125.15	507.33	368.28	660.72	652.03	8.69	76.034	
1,400.00	1,395.66	1,334.72	1,361.84	4.85	4.59	125.77	512.26	368.36	673.06	663.67	9.39	71.714	
1,500.00	1,494.68	1,417.64	1,444.55	5.24	4.89	126.32	518.08	369.57	687.55	677.51	10.05	68.436	
1,600.00	1,593.70	1,504.61	1,531.18	5.63	5.21	126.91	525.13	372.28	704.02	693.30	10.72	65.653	
1,700.00	1,692.72	1,594.64	1,620.78	6.03	5.54	127.53	533.00	376.27	721.93	710.51	11.41	63.255	
1,800.00	1,791.74	1,689.88	1,715.50	6.42	5.90	128.19	541.60	381.25	740.68	728.55	12.13	61.072	
1,900.00	1,890.76	1,784.16	1,809.24	6.82	6.25	128.83	550.15	386.66	759.90	747.06	12.84	59.189	
2,000.00	1,989.78	1,878.07	1,902.57	7.22	6.61	129.51	558.38	392.97	779.69	766.14	13.55	57.556	
2,100.00	2,088.80	1,985.63	2,009.51	7.62	7.02	130.34	566.69	401.00	799.42	785.09	14.32	55.808	
2,200.00	2,187.83	2,098.55	2,121.97	8.02	7.44	131.18	573.94	408.11	817.55	802.42	15.13	54.042	
2,300.00	2,286.85	2,200.24	2,223.35	8.42	7.82	131.89	579.74	413.58	834.66	818.78	15.88	52.577	
2,400.00	2,385.87	2,293.73	2,316.55	8.82	8.17	132.55	584.76	418.97	851.94	835.36	16.58	51.381	
2,500.00	2,484.89	2,390.97	2,413.45	9.23	8.53	133.30	589.29	425.58	869.66	852.35	17.30	50.262	
2,600.00	2,583.91	2,506.64	2,528.76	9.63	8.95	134.28	592.41	434.03	886.65	868.54	18.11	48.959	
2,700.00	2,682.93	2,626.46	2,648.36	10.04	9.38	135.32	593.02	441.38	901.57	882.64	18.93	47.639	
2,800.00	2,781.95	2,744.49	2,766.30	10.44	9.79	136.25	592.50	445.84	914.26	894.54	19.72	46.356	
2,900.00	2,880.97	2,851.34	2,873.13	10.84	10.16	136.99	592.01	447.78	925.58	905.11	20.47	45.213	
3,000.00	2,979.99	2,949.95	2,971.73	11.25	10.49	137.64	591.61	449.07	936.69	915.50	21.19	44.206	
3,100.00	3,079.01	3,048.09	3,069.86	11.65	10.83	138.26	591.40	450.43	948.08	926.17	21.91	43.279	
3,200.00	3,178.03	3,147.43	3,169.19	12.06	11.18	138.86	591.30	451.63	959.50	936.87	22.63	42.400	
3,300.00	3,277.06	3,246.14	3,267.90	12.47	11.52	139.46	591.13	452.91	971.05	947.70	23.35	41.587	
3,400.00	3,376.08	3,344.78	3,366.53	12.87	11.86	140.04	590.91	454.19	982.68	958.61	24.07	40.827	
3,500.00	3,475.10	3,442.84	3,464.58	13.28	12.21	140.59	590.84	455.47	994.49	969.70	24.79	40.120	SF

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Amethyst State #1 (OFFSET) - State 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 usft

Survey Program: 500-MWD STANDARD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	27.50	0.00	0.00	36.26	491.60	360.54	610.26				
100.00	100.00	72.19	99.69	0.13	0.13	36.25	491.62	360.54	609.66	609.40	0.26	2,365.590	
200.00	200.00	171.76	199.26	0.49	0.31	36.25	491.73	360.54	609.74	608.95	0.79	767.339	
300.00	300.00	271.34	298.84	0.85	0.49	36.24	491.92	360.54	609.90	608.57	1.33	458.047	
400.00	400.00	370.91	398.41	1.20	0.66	36.22	492.20	360.54	610.12	608.25	1.87	326.546	
500.00	500.00	470.48	497.98	1.56	0.84	36.20	492.57	360.54	610.42	608.01	2.41	253.779	
600.00	600.00	569.39	596.89	1.92	1.14	36.21	492.83	360.85	610.82	607.76	3.06	199.676	
700.00	699.99	670.01	697.49	2.27	1.49	121.61	492.53	362.12	612.02	608.25	3.76	162.683	
800.00	799.91	771.40	798.87	2.62	1.85	122.05	491.79	363.60	614.38	609.91	4.46	137.612	
900.00	899.69	872.58	900.03	2.97	2.20	122.71	490.63	365.23	617.94	612.77	5.17	119.499	
1,000.00	999.27	973.45	1,000.88	3.33	2.55	123.58	489.04	366.99	622.80	616.92	5.88	105.889	
1,100.00	1,098.57	1,073.94	1,101.33	3.70	2.91	124.65	487.04	368.90	629.07	622.48	6.60	95.365	
1,134.94	1,133.20	1,108.95	1,136.32	3.83	3.03	125.07	486.25	369.60	631.62	624.78	6.85	92.235	
1,200.00	1,197.82	1,173.70	1,201.03	4.08	3.26	125.94	484.54	371.08	636.60	629.27	7.32	86.938	
1,300.00	1,296.64	1,273.04	1,300.28	4.46	3.62	127.32	481.27	373.92	644.42	636.37	8.05	80.033	
1,400.00	1,395.66	1,372.07	1,399.17	4.85	3.98	128.75	477.23	377.43	652.51	643.73	8.78	74.295	
1,500.00	1,494.68	1,470.78	1,497.66	5.24	4.34	130.23	472.44	381.60	660.94	651.43	9.51	69.474	
1,600.00	1,593.70	1,569.13	1,595.74	5.63	4.69	131.75	466.90	386.41	669.76	659.52	10.24	65.385	
1,700.00	1,692.72	1,638.89	1,665.30	6.03	4.95	132.81	463.58	390.41	680.48	669.62	10.86	62.669	
1,800.00	1,791.74	1,722.82	1,748.99	6.42	5.25	133.81	464.48	396.63	696.18	684.66	11.52	60.421	
1,900.00	1,890.76	1,822.33	1,848.17	6.82	5.62	135.11	463.55	404.73	711.62	699.37	12.26	58.059	
2,000.00	1,989.78	1,906.56	1,932.08	7.22	5.93	136.12	463.79	411.88	728.45	715.53	12.92	56.401	
2,100.00	2,088.80	2,001.91	2,027.10	7.62	6.27	136.94	467.79	418.85	746.91	733.29	13.62	54.839	
2,200.00	2,187.83	2,107.72	2,132.53	8.02	6.66	137.93	470.55	427.32	765.19	750.81	14.38	53.209	
2,300.00	2,286.85	2,215.06	2,239.52	8.42	7.06	139.06	470.56	435.97	782.17	767.01	15.15	51.618	
2,400.00	2,385.87	2,311.31	2,335.48	8.82	7.41	140.04	470.17	443.37	798.88	783.01	15.87	50.338	
2,500.00	2,484.89	2,459.81	2,483.58	9.23	7.96	141.61	465.84	452.83	813.62	796.79	16.82	48.359	
2,600.00	2,583.91	2,568.36	2,591.91	9.63	8.34	142.74	459.68	455.68	823.78	806.21	17.57	46.875	
2,700.00	2,682.93	2,667.75	2,691.25	10.04	8.68	143.50	456.82	456.32	834.01	815.73	18.29	45.611	
2,800.00	2,781.95	2,767.81	2,791.30	10.44	9.02	144.03	456.83	455.09	844.27	825.27	19.00	44.430	
2,900.00	2,880.97	2,865.78	2,889.22	10.84	9.35	144.38	458.76	452.72	854.56	834.85	19.71	43.356	
3,000.00	2,979.99	2,962.73	2,986.14	11.25	9.68	144.76	460.18	450.94	865.13	844.72	20.41	42.382	
3,100.00	3,079.01	3,059.51	3,082.92	11.65	10.01	145.19	461.00	449.82	876.02	854.91	21.11	41.490	
3,200.00	3,178.03	3,156.11	3,179.52	12.06	10.34	145.66	461.20	449.36	887.25	865.43	21.81	40.675	
3,300.00	3,277.06	3,338.64	3,274.76	12.47	10.96	146.17	460.87	449.49	898.79	875.98	22.81	39.404	
3,400.00	3,376.08	3,350.24	3,373.64	12.87	11.00	146.73	459.88	450.32	910.72	887.50	23.22	39.221	
3,500.00	3,475.10	3,449.13	3,472.51	13.28	11.35	147.29	458.89	451.15	922.74	898.80	23.94	38.543	
3,600.00	3,574.12	3,548.01	3,571.39	13.68	11.70	147.83	457.90	451.98	934.83	910.17	24.66	37.909	
3,700.00	3,673.14	3,646.89	3,670.26	14.09	12.05	148.35	456.91	452.81	947.01	921.63	25.38	37.314	
3,800.00	3,772.16	3,745.78	3,769.14	14.50	12.40	148.86	455.92	453.65	959.27	933.17	26.10	36.754	
3,900.00	3,871.18	3,844.87	3,868.22	14.90	12.75	149.36	454.94	454.47	971.59	944.77	26.82	36.227	
4,000.00	3,970.20	3,944.20	3,967.55	15.31	13.11	149.84	454.08	455.19	983.95	956.41	27.54	35.726	
4,100.00	4,069.22	4,043.57	4,066.92	15.72	13.46	150.30	453.34	455.81	996.32	968.06	28.26	35.251	
10,750.00	10,694.89	10,668.58	10,689.89	38.43	36.82	-22.91	375.57	505.77	999.73	925.21	74.52	13.416	
10,800.00	10,735.18	10,695.00	10,716.30	38.57	36.91	-24.68	375.95	506.06	972.45	897.76	74.69	13.019	
10,850.00	10,772.74	10,727.10	10,748.39	38.71	37.02	-27.03	376.38	506.79	942.49	867.60	74.89	12.585	
10,900.00	10,807.27	10,762.74	10,784.02	38.87	37.15	-30.13	376.83	507.60	909.69	834.58	75.11	12.112	
10,950.00	10,838.53	10,796.24	10,817.51	39.04	37.27	-34.04	377.06	508.41	874.31	798.99	75.32	11.608	
11,000.00	10,866.27	10,826.29	10,847.54	39.24	37.37	-38.91	377.02	509.19	836.68	761.17	75.51	11.080	
11,050.00	10,890.29	10,852.64	10,873.89	39.46	37.47	-44.92	376.78	509.91	797.20	721.50	75.70	10.531	
11,100.00	10,910.39	10,875.09	10,896.32	39.72	37.55	-52.18	376.45	510.56	756.27	680.38	75.88	9.966	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Amethyst State #1 (OFFSET) - State 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.00 usft

Survey Program: 500-MWD STANDARD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,150.00	10,926.42	10,894.00	10,915.22	40.01	37.62	-60.65	376.08	511.10	714.35	638.27	76.08	9.390	
11,200.00	10,938.27	10,908.32	10,929.53	40.34	37.67	-69.84	375.79	511.50	671.93	595.65	76.28	8.809	
11,212.10	10,940.49	10,911.08	10,932.29	40.43	37.68	-72.10	375.73	511.57	661.65	585.32	76.33	8.668	
11,250.00	10,946.33	10,918.45	10,939.66	40.71	37.70	-76.71	375.57	511.77	629.63	553.12	76.51	8.229	
11,300.00	10,951.75	10,925.66	10,946.86	41.12	37.73	-82.31	375.41	511.95	588.05	511.26	76.78	7.658	
11,350.00	10,954.57	10,930.02	10,951.22	41.56	37.75	-87.16	375.32	512.06	547.61	470.48	77.13	7.100	
11,378.77	10,955.00	10,931.25	10,952.45	41.83	37.75	-89.56	375.29	512.09	525.03	447.67	77.36	6.787	
11,400.00	10,955.00	10,931.82	10,953.02	42.03	37.75	-89.66	375.27	512.10	508.76	431.21	77.55	6.560	
11,500.00	10,955.00	10,934.44	10,955.64	43.10	37.76	-90.11	375.21	512.17	437.88	359.08	78.80	5.557	
11,600.00	10,955.00	10,937.01	10,958.21	44.33	37.77	-90.55	375.15	512.23	380.31	299.62	80.68	4.714	
11,700.00	10,955.00	10,939.54	10,960.74	45.70	37.78	-90.99	375.10	512.29	342.80	259.80	83.00	4.130	
11,785.69	10,955.00	10,941.67	10,962.87	46.99	37.79	-91.36	375.04	512.35	331.92	247.24	84.68	3.920	CC, ES
11,800.00	10,955.00	10,942.03	10,963.22	47.21	37.79	-91.42	375.04	512.35	332.23	247.36	84.87	3.914	SF
11,900.00	10,955.00	10,944.47	10,965.66	48.83	37.80	-91.84	374.98	512.41	351.05	265.60	85.44	4.108	
12,000.00	10,955.00	10,946.86	10,968.06	50.56	37.81	-92.25	374.92	512.47	395.07	310.21	84.85	4.656	
12,100.00	10,955.00	10,949.22	10,970.41	52.38	37.81	-92.66	374.86	512.52	457.07	373.26	83.81	5.454	
12,200.00	10,955.00	10,951.53	10,972.72	54.29	37.82	-93.06	374.81	512.58	530.78	448.02	82.76	6.413	
12,300.00	10,955.00	10,953.81	10,975.00	56.29	37.83	-93.45	374.75	512.63	612.00	530.11	81.89	7.474	
12,400.00	10,955.00	10,956.05	10,977.23	58.35	37.84	-93.84	374.70	512.68	698.10	616.91	81.19	8.598	
12,500.00	10,955.00	10,958.25	10,979.43	60.47	37.85	-94.22	374.64	512.73	787.49	706.84	80.64	9.765	
12,600.00	10,955.00	10,960.41	10,981.59	62.65	37.86	-94.59	374.59	512.78	879.16	798.95	80.21	10.961	
12,700.00	10,955.00	10,962.54	10,983.72	64.89	37.86	-94.95	374.53	512.83	972.46	892.60	79.87	12.176	

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Emerald State Com #1 (OFFSET) - Com #1 - Original Hole - Original Hole — **Offset Site Error:** 0.00 usft

Survey Program: 100-MWD STANDARD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	2.50	0.00	0.00	66.48	365.72	840.49	916.62				
100.00	100.00	97.75	100.25	0.13	0.18	66.51	365.35	840.64	916.60	916.30	0.30	3,019.133	
200.00	200.00	199.88	202.38	0.49	0.54	66.58	364.28	840.94	916.46	915.43	1.02	894.271	
300.00	300.00	298.30	300.79	0.85	0.89	66.65	363.13	841.26	916.29	914.55	1.74	527.570	
333.65	333.65	331.17	333.65	0.97	1.01	66.68	362.78	841.40	916.27	914.30	1.98	463.813	CC
400.00	400.00	395.94	398.42	1.20	1.24	66.73	361.94	841.82	916.33	913.88	2.45	374.611	
500.00	500.00	492.28	494.74	1.56	1.59	66.83	360.74	842.72	916.70	913.55	3.15	291.011	ES
600.00	600.00	585.73	588.19	1.92	1.92	66.90	360.03	843.96	917.62	913.78	3.84	239.013	
700.00	699.99	678.89	681.33	2.27	2.25	152.16	359.88	845.70	920.43	915.91	4.52	203.648	
800.00	799.91	774.82	777.23	2.62	2.59	152.27	360.12	847.97	926.18	920.97	5.21	177.923	
900.00	899.69	872.08	874.45	2.97	2.93	152.45	360.37	850.59	934.55	928.65	5.90	158.388	
1,000.00	999.27	969.25	971.59	3.33	3.27	152.66	360.81	853.37	945.49	938.89	6.60	143.296	
1,100.00	1,098.57	1,067.25	1,069.54	3.70	3.62	152.90	361.74	856.16	958.93	951.63	7.30	131.342	
1,134.94	1,133.20	1,101.74	1,104.01	3.83	3.74	153.00	362.05	857.16	964.20	956.65	7.55	127.709	
1,200.00	1,197.62	1,172.03	1,174.28	4.08	3.99	153.27	362.58	859.00	974.07	966.03	8.03	121.275	
1,300.00	1,296.64	1,271.24	1,273.46	4.46	4.35	153.65	363.22	861.15	988.81	980.07	8.74	113.112	SF

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #122H - Lateral - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.04	60.08	-0.04	60.08				
100.00	100.00	100.00	100.00	0.13	0.13	-0.04	60.08	-0.04	60.08	59.83	0.26	234.421	
200.00	200.00	200.00	200.00	0.49	0.49	-0.04	60.08	-0.04	60.08	59.11	0.97	61.735	
300.00	300.00	300.00	300.00	0.85	0.85	-0.04	60.08	-0.04	60.08	58.39	1.69	35.549	
400.00	400.00	400.00	400.00	1.20	1.20	-0.04	60.08	-0.04	60.08	57.68	2.41	24.961	
500.00	500.00	500.00	500.00	1.56	1.56	-0.04	60.08	-0.04	60.08	56.96	3.12	19.233	
600.00	600.00	600.00	600.00	1.92	1.92	-0.04	60.08	-0.04	60.08	56.24	3.84	15.643	CC
700.00	699.99	699.21	699.19	2.27	2.27	85.32	60.74	-1.15	60.63	56.09	4.54	13.344	ES
800.00	799.91	798.39	798.30	2.62	2.62	85.80	62.69	-4.49	62.28	57.04	5.24	11.883	
900.00	899.69	897.54	897.24	2.97	2.98	86.54	65.95	-10.03	65.03	59.08	5.95	10.936	
1,000.00	999.27	996.63	995.92	3.33	3.34	87.47	70.50	-17.79	68.90	62.24	6.66	10.342	
1,100.00	1,098.57	1,095.64	1,094.25	3.70	3.70	88.52	76.34	-27.74	73.89	66.50	7.39	9.997	
1,134.94	1,133.20	1,135.97	1,128.49	3.83	3.85	88.90	78.68	-31.72	75.90	68.23	7.67	9.894	
1,200.00	1,197.62	1,204.87	1,192.80	4.08	4.11	89.61	83.26	-39.51	79.80	71.63	8.18	9.759	
1,300.00	1,296.64	1,305.06	1,291.63	4.46	4.49	90.58	90.29	-51.49	85.82	76.88	8.94	9.599	
1,400.00	1,395.66	1,405.25	1,390.47	4.85	4.88	91.41	97.32	-63.46	91.86	82.15	9.71	9.458	
1,500.00	1,494.68	1,505.45	1,489.31	5.24	5.27	92.15	104.35	-75.43	97.92	87.43	10.49	9.334	
1,600.00	1,593.70	1,605.64	1,588.15	5.63	5.66	92.80	111.38	-87.41	103.99	92.71	11.27	9.225	
1,700.00	1,692.72	1,705.83	1,686.99	6.03	6.06	93.37	118.41	-99.38	110.07	98.01	12.06	9.128	
1,800.00	1,791.74	1,806.02	1,785.83	6.42	6.45	93.89	125.44	-111.35	116.16	103.31	12.85	9.041	
1,900.00	1,890.76	1,906.21	1,884.67	6.82	6.85	94.35	132.47	-123.32	122.26	108.62	13.64	8.963	
2,000.00	1,989.78	2,006.40	1,983.50	7.22	7.25	94.77	139.50	-135.30	128.37	113.93	14.43	8.893	
2,100.00	2,088.80	2,106.59	2,082.34	7.62	7.65	95.16	146.53	-147.27	134.48	119.25	15.23	8.830	
2,200.00	2,187.83	2,206.78	2,181.18	8.02	8.05	95.50	153.56	-159.24	140.60	124.57	16.03	8.772	
2,300.00	2,286.85	2,306.97	2,280.02	8.42	8.45	95.82	160.59	-171.22	146.72	129.90	16.83	8.719	
2,400.00	2,385.87	2,392.84	2,378.86	8.82	8.79	96.12	167.61	-183.19	152.85	135.28	17.57	8.699	
2,500.00	2,484.89	2,507.35	2,477.70	9.23	9.25	96.39	174.64	-195.16	158.98	140.55	18.43	8.627	
2,600.00	2,583.91	2,607.55	2,576.54	9.63	9.65	96.64	181.67	-207.14	165.12	145.89	19.23	8.586	
2,700.00	2,682.93	2,707.74	2,675.38	10.04	10.06	96.88	188.70	-219.11	171.26	151.22	20.03	8.549	
2,800.00	2,781.95	2,807.93	2,774.21	10.44	10.46	97.09	195.73	-231.08	177.40	156.56	20.84	8.514	
2,900.00	2,880.97	2,891.88	2,873.05	10.84	10.80	97.30	202.76	-243.06	183.54	161.96	21.58	8.507	
3,000.00	2,979.99	3,008.31	2,971.89	11.25	11.27	97.48	209.79	-255.03	189.68	167.24	22.45	8.451	
3,100.00	3,079.01	3,108.50	3,070.73	11.65	11.67	97.66	216.82	-267.00	195.83	172.58	23.25	8.423	
3,200.00	3,178.03	3,208.69	3,169.57	12.06	12.07	97.83	223.85	-278.98	201.98	177.92	24.06	8.396	
3,300.00	3,277.06	3,291.12	3,268.41	12.47	12.40	97.99	230.88	-290.95	208.13	183.34	24.79	8.396	
3,400.00	3,376.08	3,409.07	3,367.25	12.87	12.88	98.13	237.91	-302.92	214.28	188.61	25.67	8.348	
3,500.00	3,475.10	3,509.26	3,466.08	13.28	13.28	98.27	244.94	-314.90	220.44	193.96	26.47	8.326	
3,600.00	3,574.12	3,609.45	3,564.92	13.68	13.69	98.41	251.97	-326.87	226.59	199.31	27.28	8.306	
3,700.00	3,673.14	3,709.64	3,663.76	14.09	14.09	98.53	259.00	-338.84	232.75	204.66	28.09	8.286	
3,800.00	3,772.16	3,809.84	3,762.60	14.50	14.50	98.65	266.03	-350.82	238.90	210.01	28.90	8.268	
3,900.00	3,871.18	3,889.97	3,861.44	14.90	14.82	98.76	273.06	-362.79	245.06	215.44	29.62	8.273	
4,000.00	3,970.20	3,989.78	3,960.28	15.31	15.23	98.87	280.09	-374.76	251.22	220.79	30.43	8.256	
4,100.00	4,069.22	4,089.59	4,059.12	15.72	15.63	98.97	287.12	-386.73	257.38	226.14	31.23	8.240	
4,200.00	4,168.24	4,189.40	4,157.96	16.12	16.03	99.07	294.15	-398.71	263.54	231.50	32.04	8.225	
4,300.00	4,267.26	4,289.21	4,256.79	16.53	16.44	99.16	301.18	-410.68	269.70	236.85	32.85	8.211	
4,400.00	4,366.29	4,389.02	4,355.63	16.94	16.84	99.25	308.21	-422.65	275.86	242.20	33.65	8.197	
4,440.92	4,406.80	4,429.86	4,396.08	17.10	17.01	99.29	311.09	-427.55	278.38	244.40	33.98	8.191	
4,500.00	4,465.37	4,488.83	4,454.48	17.34	17.24	99.30	315.24	-434.63	281.95	247.49	34.46	8.182	
4,600.00	4,564.74	4,588.64	4,553.31	17.73	17.65	98.90	322.27	-446.60	287.66	252.41	35.25	8.161	
4,700.00	4,664.38	4,688.37	4,652.07	18.11	18.05	98.02	329.29	-458.56	293.02	256.99	36.02	8.134	
4,800.00	4,764.20	4,787.96	4,750.70	18.46	18.45	96.67	336.31	-470.51	298.14	261.36	36.78	8.106	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #122H - Lateral - Plan #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,864.14	4,887.35	4,849.12	18.81	18.86	94.88	343.31	-482.43	303.22	265.71	37.51	8.083	
4,975.86	4,940.00	4,962.56	4,923.60	19.06	19.16	8.05	348.61	-491.46	307.18	269.13	38.05	8.072	
5,000.00	4,964.14	4,986.47	4,947.27	19.14	19.26	7.48	350.29	-494.32	308.48	270.26	38.22	8.071	
5,100.00	5,064.14	5,086.11	5,045.95	19.45	19.66	5.15	357.29	-506.24	314.20	275.28	38.92	8.074	
5,200.00	5,164.14	5,189.19	5,148.27	19.78	20.07	3.12	363.61	-517.02	319.60	279.98	39.62	8.066	
5,300.00	5,264.14	5,292.87	5,251.48	20.10	20.46	1.58	368.56	-525.45	324.05	283.73	40.32	8.038	
5,400.00	5,364.14	5,397.01	5,355.39	20.42	20.84	0.51	372.11	-531.48	327.35	286.35	41.00	7.984	
5,500.00	5,464.14	5,501.46	5,459.74	20.74	21.20	-0.12	374.22	-535.07	329.36	287.69	41.67	7.904	
5,600.00	5,564.14	5,606.05	5,564.33	21.07	21.55	-0.31	374.88	-536.21	330.00	287.67	42.33	7.796	
5,607.06	5,571.20	5,613.44	5,571.71	21.09	21.57	-0.31	374.87	-536.19	329.99	287.62	42.38	7.787	
5,700.00	5,664.14	5,705.86	5,664.14	21.40	21.87	-0.31	374.88	-536.21	330.00	287.02	42.98	7.677	
5,800.00	5,764.14	5,805.86	5,764.14	21.72	22.19	-0.31	374.88	-536.21	330.00	286.36	43.64	7.562	
5,900.00	5,864.14	5,905.86	5,864.14	22.05	22.52	-0.31	374.88	-536.21	330.00	285.70	44.30	7.450	
6,000.00	5,964.14	6,005.86	5,964.14	22.38	22.84	-0.31	374.88	-536.21	330.00	285.05	44.96	7.341	
6,100.00	6,064.14	6,105.86	6,064.14	22.71	23.17	-0.31	374.88	-536.21	330.00	284.38	45.62	7.234	
6,200.00	6,164.14	6,205.86	6,164.14	23.04	23.50	-0.31	374.88	-536.21	330.00	283.72	46.28	7.130	
6,300.00	6,264.14	6,305.86	6,264.14	23.38	23.83	-0.31	374.88	-536.21	330.00	283.06	46.95	7.030	
6,400.00	6,364.14	6,405.86	6,364.14	23.71	24.16	-0.31	374.88	-536.21	330.00	282.39	47.61	6.931	
6,500.00	6,464.14	6,505.86	6,464.14	24.04	24.49	-0.31	374.88	-536.21	330.00	281.72	48.28	6.835	
6,600.00	6,564.14	6,605.86	6,564.14	24.38	24.82	-0.31	374.88	-536.21	330.00	281.05	48.95	6.742	
6,700.00	6,664.14	6,705.86	6,664.14	24.71	25.15	-0.31	374.88	-536.21	330.00	280.38	49.62	6.651	
6,800.00	6,764.14	6,805.86	6,764.14	25.05	25.49	-0.31	374.88	-536.21	330.00	279.71	50.29	6.562	
6,900.00	6,864.14	6,905.86	6,864.14	25.38	25.82	-0.31	374.88	-536.21	330.00	279.04	50.96	6.475	
7,000.00	6,964.14	7,005.86	6,964.14	25.72	26.15	-0.31	374.88	-536.21	330.00	278.37	51.64	6.391	
7,100.00	7,064.14	7,105.86	7,064.14	26.06	26.49	-0.31	374.88	-536.21	330.00	277.69	52.31	6.308	
7,200.00	7,164.14	7,205.86	7,164.14	26.39	26.83	-0.31	374.88	-536.21	330.00	277.01	52.99	6.228	
7,300.00	7,264.14	7,305.86	7,264.14	26.73	27.16	-0.31	374.88	-536.21	330.00	276.34	53.66	6.149	
7,400.00	7,364.14	7,405.86	7,364.14	27.07	27.50	-0.31	374.88	-536.21	330.00	275.66	54.34	6.073	
7,500.00	7,464.14	7,505.86	7,464.14	27.41	27.84	-0.31	374.88	-536.21	330.00	274.98	55.02	5.998	
7,600.00	7,564.14	7,605.86	7,564.14	27.75	28.17	-0.31	374.88	-536.21	330.00	274.30	55.70	5.924	
7,700.00	7,664.14	7,705.86	7,664.14	28.09	28.51	-0.31	374.88	-536.21	330.00	273.62	56.38	5.853	
7,800.00	7,764.14	7,805.93	7,764.20	28.43	28.85	-0.26	374.88	-535.92	330.00	272.94	57.06	5.783	
7,833.69	7,797.83	7,839.62	7,797.83	28.55	28.95	0.09	374.88	-533.86	329.99	272.71	57.29	5.760	
7,900.00	7,864.14	7,904.70	7,862.16	28.77	29.13	1.75	374.86	-524.32	330.14	272.41	57.73	5.719	
8,000.00	7,964.14	7,996.94	7,950.60	29.11	29.37	6.22	374.82	-498.45	332.16	273.81	58.36	5.692 SF	
8,100.00	8,064.14	8,079.15	8,025.02	29.46	29.57	12.10	374.76	-463.70	339.63	280.94	58.69	5.787	
8,200.00	8,164.14	8,150.00	8,084.62	29.80	29.73	18.28	374.70	-425.46	356.33	298.01	58.32	6.110	
8,300.00	8,264.14	8,210.15	8,131.19	30.14	29.88	24.02	374.64	-387.44	384.72	327.71	57.01	6.749	
8,400.00	8,364.14	8,260.64	8,167.03	30.49	30.01	28.97	374.58	-351.90	425.27	370.39	54.88	7.749	
8,500.00	8,464.14	8,300.00	8,192.72	30.83	30.13	32.78	374.53	-322.08	476.88	424.66	52.23	9.131	
8,600.00	8,564.14	8,338.81	8,215.98	31.17	30.27	36.44	374.48	-291.03	537.66	487.89	49.77	10.802	
8,700.00	8,664.14	8,369.15	8,232.67	31.52	30.39	39.19	374.44	-265.70	605.78	558.39	47.40	12.781	
8,800.00	8,764.14	8,400.00	8,248.24	31.86	30.53	41.87	374.40	-239.07	679.67	634.19	45.48	14.943	
8,900.00	8,864.14	8,417.39	8,256.38	32.21	30.62	43.32	374.38	-223.70	757.94	714.37	43.57	17.397	
9,000.00	8,964.14	8,436.76	8,264.89	32.55	30.72	44.88	374.35	-206.30	839.73	797.61	42.11	19.940	
9,100.00	9,064.14	8,450.00	8,270.37	32.90	30.79	45.92	374.33	-194.25	924.29	883.45	40.83	22.636	

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #202H - Lateral - Plan #1 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.01	0.00	120.01				
100.00	100.00	100.00	100.00	0.13	0.13	0.00	120.01	0.00	120.01	119.75	0.26	468.213	
200.00	200.00	200.00	200.00	0.49	0.49	0.00	120.01	0.00	120.01	119.03	0.97	123.305	
300.00	300.00	300.00	300.00	0.85	0.85	0.00	120.01	0.00	120.01	118.32	1.69	71.002	
400.00	400.00	400.00	400.00	1.20	1.20	0.00	120.01	0.00	120.01	117.60	2.41	49.854	
500.00	500.00	500.00	500.00	1.56	1.56	0.00	120.01	0.00	120.01	116.88	3.12	38.413	
600.00	600.00	600.00	600.00	1.92	1.92	0.00	120.01	0.00	120.01	116.17	3.84	31.243	CC, ES
700.00	699.99	697.73	697.72	2.27	2.27	85.39	120.93	-0.85	120.84	116.30	4.54	26.615	
800.00	799.91	795.41	795.33	2.62	2.62	85.94	123.68	-3.39	123.34	118.11	5.23	23.565	
900.00	899.69	892.99	892.71	2.97	2.97	86.82	128.27	-7.61	127.55	121.61	5.93	21.494	
1,000.00	999.27	990.42	989.75	3.33	3.32	87.95	134.68	-13.50	133.47	126.83	6.64	20.098	
1,100.00	1,098.57	1,087.66	1,086.33	3.70	3.68	89.25	142.89	-21.05	141.15	133.80	7.36	19.183	
1,134.94	1,133.20	1,121.58	1,119.96	3.83	3.80	89.73	146.17	-24.07	144.26	136.65	7.61	18.953	
1,200.00	1,197.62	1,186.01	1,183.76	4.08	4.05	90.65	152.76	-30.13	150.39	142.29	8.10	18.575	
1,300.00	1,296.64	1,285.49	1,282.28	4.46	4.42	91.93	162.95	-39.50	159.89	151.04	8.85	18.065	
1,400.00	1,395.66	1,384.98	1,380.80	4.85	4.81	93.07	173.13	-48.87	169.46	159.85	9.61	17.628	
1,500.00	1,494.68	1,484.47	1,479.32	5.24	5.19	94.08	183.32	-58.25	179.09	168.71	10.38	17.251	
1,600.00	1,593.70	1,583.96	1,577.84	5.63	5.58	94.99	193.51	-67.62	188.77	177.62	11.15	16.924	
1,700.00	1,692.72	1,683.44	1,676.36	6.03	5.97	95.81	203.70	-76.99	198.50	186.57	11.93	16.638	
1,800.00	1,791.74	1,782.93	1,774.88	6.42	6.36	96.56	213.89	-86.36	208.26	195.55	12.71	16.386	
1,900.00	1,890.76	1,882.42	1,873.40	6.82	6.75	97.23	224.07	-95.73	218.05	204.56	13.49	16.162	
2,000.00	1,989.78	1,981.91	1,971.92	7.22	7.15	97.85	234.26	-105.10	227.87	213.60	14.28	15.963	
2,100.00	2,088.80	2,081.39	2,070.44	7.62	7.54	98.42	244.45	-114.48	237.72	222.66	15.06	15.784	
2,200.00	2,187.83	2,180.88	2,168.96	8.02	7.94	98.94	254.64	-123.85	247.58	231.74	15.85	15.622	
2,300.00	2,286.85	2,280.37	2,267.48	8.42	8.33	99.43	264.82	-133.22	257.47	240.83	16.64	15.476	
2,400.00	2,385.87	2,379.86	2,366.00	8.82	8.73	99.87	275.01	-142.59	267.37	249.94	17.43	15.343	
2,500.00	2,484.89	2,479.35	2,464.52	9.23	9.13	100.29	285.20	-151.96	277.29	259.07	18.22	15.221	
2,600.00	2,583.91	2,578.83	2,563.04	9.63	9.52	100.68	295.39	-161.33	287.22	268.21	19.01	15.110	
2,700.00	2,682.93	2,678.32	2,661.56	10.04	9.92	101.04	305.58	-170.71	297.16	277.36	19.80	15.008	
2,800.00	2,781.95	2,777.81	2,760.08	10.44	10.32	101.38	315.76	-180.08	307.11	286.52	20.59	14.913	
2,900.00	2,880.97	2,877.30	2,858.60	10.84	10.72	101.69	325.95	-189.45	317.08	295.69	21.39	14.826	
3,000.00	2,979.99	2,976.78	2,957.12	11.25	11.12	101.99	336.14	-198.82	327.05	304.87	22.18	14.745	
3,100.00	3,079.01	3,076.27	3,055.64	11.65	11.51	102.27	346.33	-208.19	337.03	314.05	22.97	14.670	
3,200.00	3,178.03	3,175.76	3,154.16	12.06	11.91	102.53	356.51	-217.56	347.02	323.25	23.77	14.599	
3,300.00	3,277.06	3,275.25	3,252.68	12.47	12.31	102.78	366.70	-226.94	357.01	332.45	24.56	14.534	
3,400.00	3,376.08	3,374.73	3,351.20	12.87	12.71	103.01	376.89	-236.31	367.01	341.65	25.36	14.472	
3,500.00	3,475.10	3,474.22	3,449.72	13.28	13.11	103.24	387.08	-245.68	377.02	350.86	26.16	14.415	
3,600.00	3,574.12	3,573.71	3,548.24	13.68	13.51	103.45	397.27	-255.05	387.03	360.08	26.95	14.360	
3,700.00	3,673.14	3,673.20	3,646.76	14.09	13.91	103.65	407.45	-264.42	397.05	369.30	27.75	14.309	
3,800.00	3,772.16	3,772.69	3,745.28	14.50	14.31	103.84	417.64	-273.79	407.07	378.52	28.54	14.261	
3,900.00	3,871.18	3,872.17	3,843.80	14.90	14.71	104.02	427.83	-283.17	417.09	387.75	29.34	14.216	
4,000.00	3,970.20	3,971.66	3,942.32	15.31	15.11	104.19	438.02	-292.54	427.12	396.99	30.14	14.173	
4,100.00	4,069.22	4,071.15	4,040.84	15.72	15.51	104.36	448.21	-301.91	437.16	406.22	30.93	14.132	
4,200.00	4,168.24	4,170.64	4,139.36	16.12	15.91	104.52	458.39	-311.28	447.19	415.46	31.73	14.093	
4,300.00	4,267.26	4,270.12	4,237.88	16.53	16.31	104.67	468.58	-320.65	457.23	424.70	32.53	14.056	
4,400.00	4,366.29	4,369.61	4,336.40	16.94	16.71	104.81	478.77	-330.02	467.28	433.95	33.33	14.021	
4,440.92	4,406.80	4,410.32	4,376.71	17.10	16.88	104.87	482.94	-333.86	471.39	437.73	33.65	14.008	
4,500.00	4,465.37	4,469.11	4,434.93	17.34	17.11	104.98	488.96	-339.40	477.20	443.08	34.12	13.986	
4,600.00	4,564.74	4,568.66	4,533.52	17.73	17.52	104.92	499.15	-348.77	486.52	451.62	34.90	13.939	
4,700.00	4,664.38	4,668.20	4,632.08	18.11	17.92	104.57	509.35	-358.15	495.18	459.51	35.67	13.883	
4,800.00	4,764.20	4,767.66	4,730.57	18.46	18.32	103.94	519.53	-367.52	503.25	466.83	36.42	13.818	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #202H - Lateral - Plan #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,864.14	4,866.96	4,828.92	18.81	18.72	103.04	529.70	-376.87	510.81	473.65	37.15	13.749	
4,975.86	4,940.00	4,942.16	4,903.38	19.06	19.02	16.99	537.40	-383.96	516.28	478.58	37.70	13.696	
5,000.00	4,964.14	4,966.06	4,927.05	19.14	19.12	16.67	539.85	-386.21	518.00	480.13	37.87	13.680	
5,100.00	5,064.14	5,065.09	5,025.12	19.45	19.52	15.37	549.99	-395.54	525.29	486.73	38.57	13.620	
5,200.00	5,164.14	5,164.12	5,123.18	19.78	19.91	14.11	560.13	-404.87	532.85	493.58	39.27	13.570	
5,300.00	5,264.14	5,263.15	5,221.24	20.10	20.31	12.89	570.27	-414.19	540.66	500.70	39.97	13.527	
5,400.00	5,364.14	5,362.17	5,319.31	20.42	20.71	11.70	580.41	-423.52	548.72	508.05	40.67	13.493	
5,500.00	5,464.14	5,461.20	5,417.37	20.74	21.11	10.54	590.55	-432.85	557.00	515.64	41.36	13.466	
5,600.00	5,564.14	5,560.23	5,515.44	21.07	21.51	9.42	600.69	-442.18	565.51	523.45	42.06	13.445	
5,700.00	5,664.14	5,659.26	5,613.50	21.40	21.91	8.33	610.83	-451.51	574.22	531.47	42.75	13.431	
5,800.00	5,764.14	5,758.28	5,711.56	21.72	22.31	7.28	620.97	-460.84	583.14	539.69	43.45	13.421	
5,900.00	5,864.14	5,857.31	5,809.63	22.05	22.71	6.25	631.11	-470.16	592.25	548.11	44.14	13.417	
6,000.00	5,964.14	5,956.34	5,907.69	22.38	23.11	5.26	641.25	-479.49	601.54	556.71	44.84	13.416	
6,100.00	6,064.14	6,055.36	6,005.76	22.71	23.51	4.30	651.39	-488.82	611.01	565.48	45.53	13.420	
6,200.00	6,164.14	6,154.39	6,103.82	23.04	23.91	3.36	661.54	-498.15	620.65	574.43	46.22	13.427	
6,300.00	6,264.14	6,253.42	6,201.88	23.38	24.31	2.46	671.68	-507.48	630.45	583.53	46.92	13.438	
6,400.00	6,364.14	6,358.19	6,305.68	23.71	24.73	1.55	682.19	-517.15	640.21	592.56	47.65	13.437	
6,500.00	6,464.14	6,471.39	6,418.16	24.04	25.17	0.77	691.53	-525.74	648.33	599.91	48.42	13.391	
6,600.00	6,564.14	6,585.26	6,531.63	24.38	25.59	0.20	698.44	-532.10	654.37	605.20	49.16	13.310	
6,700.00	6,664.14	6,699.59	6,645.80	24.71	25.99	-0.15	702.87	-536.18	658.25	608.36	49.89	13.194	
6,800.00	6,764.14	6,814.17	6,760.35	25.05	26.38	-0.31	704.79	-537.94	659.93	609.34	50.59	13.046	
6,900.00	6,864.14	6,917.96	6,864.14	25.38	26.71	-0.31	704.88	-538.02	660.00	608.74	51.26	12.876	
7,000.00	6,964.14	7,017.96	6,964.14	25.72	27.04	-0.31	704.88	-538.02	660.00	608.07	51.93	12.710	
7,100.00	7,064.14	7,117.96	7,064.14	26.06	27.36	-0.31	704.88	-538.02	660.00	607.40	52.60	12.547	
7,200.00	7,164.14	7,217.96	7,164.14	26.39	27.69	-0.31	704.88	-538.02	660.00	606.73	53.27	12.389	
7,300.00	7,264.14	7,317.96	7,264.14	26.73	28.01	-0.31	704.88	-538.02	660.00	606.05	53.95	12.234	
7,400.00	7,364.14	7,417.96	7,364.14	27.07	28.34	-0.31	704.88	-538.02	660.00	605.38	54.62	12.082	
7,500.00	7,464.14	7,517.96	7,464.14	27.41	28.67	-0.31	704.88	-538.02	660.00	604.70	55.30	11.935	
7,600.00	7,564.14	7,617.96	7,564.14	27.75	29.00	-0.31	704.88	-538.02	660.00	604.02	55.98	11.790	
7,700.00	7,664.14	7,717.96	7,664.14	28.09	29.33	-0.31	704.88	-538.02	660.00	603.35	56.66	11.649	
7,800.00	7,764.14	7,817.96	7,764.14	28.43	29.66	-0.31	704.88	-538.02	660.00	602.67	57.34	11.511	
7,900.00	7,864.14	7,917.96	7,864.14	28.77	29.99	-0.31	704.88	-538.02	660.00	601.99	58.02	11.376	
8,000.00	7,964.14	8,017.96	7,964.14	29.11	30.32	-0.31	704.88	-538.02	660.00	601.30	58.70	11.244	
8,100.00	8,064.14	8,117.96	8,064.14	29.46	30.65	-0.31	704.88	-538.02	660.00	600.62	59.38	11.115	
8,200.00	8,164.14	8,217.96	8,164.14	29.80	30.98	-0.31	704.88	-538.02	660.00	599.94	60.06	10.988	
8,300.00	8,264.14	8,317.96	8,264.14	30.14	31.32	-0.31	704.88	-538.02	660.00	599.26	60.75	10.865	
8,400.00	8,364.14	8,417.96	8,364.14	30.49	31.65	-0.31	704.88	-538.02	660.00	598.57	61.43	10.744	
8,500.00	8,464.14	8,517.96	8,464.14	30.83	31.98	-0.31	704.88	-538.02	660.00	597.89	62.12	10.625	
8,600.00	8,564.14	8,617.96	8,564.14	31.17	32.32	-0.31	704.88	-538.02	660.00	597.20	62.80	10.509	
8,700.00	8,664.14	8,717.96	8,664.14	31.52	32.65	-0.31	704.88	-538.02	660.00	596.51	63.49	10.396	
8,800.00	8,764.14	8,817.96	8,764.14	31.86	32.99	-0.31	704.88	-538.02	660.00	595.83	64.18	10.284	
8,900.00	8,864.14	8,917.96	8,864.14	32.21	33.33	-0.31	704.88	-538.02	660.00	595.14	64.86	10.175	
9,000.00	8,964.14	9,017.96	8,964.14	32.55	33.66	-0.31	704.88	-538.02	660.00	594.45	65.55	10.068	
9,100.00	9,064.14	9,117.96	9,064.14	32.90	34.00	-0.31	704.88	-538.02	660.00	593.76	66.24	9.964	
9,200.00	9,164.14	9,217.96	9,164.14	33.24	34.34	-0.31	704.88	-538.02	660.00	593.07	66.93	9.861	
9,300.00	9,264.14	9,318.04	9,264.22	33.59	34.67	-0.31	704.88	-537.93	660.00	592.38	67.62	9.761	
9,363.27	9,327.41	9,381.43	9,327.41	33.81	34.87	0.09	704.87	-533.33	659.99	591.94	68.05	9.699	
9,400.00	9,364.14	9,417.52	9,363.03	33.93	34.97	0.59	704.86	-527.60	660.01	591.72	68.30	9.664	
9,500.00	9,464.14	9,510.79	9,452.76	34.28	35.21	2.76	704.82	-502.53	660.80	591.84	68.97	9.582	
9,600.00	9,564.14	9,594.12	9,528.56	34.63	35.40	5.74	704.77	-468.08	664.16	594.58	69.57	9.546	SF
9,700.00	9,664.14	9,666.10	9,589.42	34.97	35.55	9.01	704.70	-429.75	672.23	602.25	69.98	9.605	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #202H - Lateral - Plan #1

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,800.00	9,764.14	9,727.07	9,636.89	35.32	35.67	12.22	704.64	-391.51	686.94	616.91	70.03	9.809	
9,900.00	9,864.14	9,778.30	9,673.44	35.67	35.77	15.16	704.58	-355.64	709.59	639.98	69.61	10.194	
10,000.00	9,964.14	9,821.29	9,701.54	36.02	35.86	17.76	704.53	-323.12	740.76	672.07	68.69	10.784	
10,100.00	10,064.14	9,850.00	9,718.91	36.36	35.92	19.54	704.49	-300.27	780.44	713.22	67.22	11.610	
10,200.00	10,164.14	9,888.20	9,740.21	36.71	36.02	21.95	704.44	-268.57	827.89	762.13	65.76	12.590	
10,300.00	10,264.14	9,914.40	9,753.57	37.06	36.10	23.62	704.41	-246.04	882.49	818.48	64.01	13.786	
10,400.00	10,364.14	9,936.94	9,764.24	37.41	36.17	25.05	704.37	-226.18	943.29	881.05	62.25	15.154	
10,412.10	10,376.24	9,950.00	9,770.06	37.45	36.21	25.88	704.35	-214.49	951.16	888.91	62.24	15.281	
10,450.00	10,414.11	9,950.00	9,770.06	37.58	36.21	-61.42	704.35	-214.49	975.32	913.89	61.43	15.878	

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #206H - Lateral - Plan #2 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.05	29.97	-0.02	29.97				
100.00	100.00	100.00	100.00	0.13	0.13	-0.05	29.97	-0.02	29.97	29.72	0.26	116.945	
200.00	200.00	200.00	200.00	0.49	0.49	-0.05	29.97	-0.02	29.97	29.00	0.97	30.798	
300.00	300.00	300.00	300.00	0.85	0.85	-0.05	29.97	-0.02	29.97	28.28	1.69	17.734	
400.00	400.00	400.00	400.00	1.20	1.20	-0.05	29.97	-0.02	29.97	27.57	2.41	12.452	
500.00	500.00	500.00	500.00	1.56	1.56	-0.05	29.97	-0.02	29.97	26.85	3.12	9.594	
600.00	600.00	600.00	600.00	1.92	1.92	-0.05	29.97	-0.02	29.97	26.13	3.84	7.804	CC
700.00	699.99	699.79	699.78	2.27	2.27	85.23	30.32	-1.28	30.21	25.66	4.54	6.648	ES
800.00	799.91	799.58	799.49	2.62	2.62	85.46	31.34	-5.06	30.90	25.66	5.24	5.897	
900.00	899.69	899.37	899.06	2.97	2.98	85.83	33.04	-11.34	32.07	26.12	5.95	5.392	
1,000.00	999.27	999.14	998.42	3.33	3.34	86.29	35.43	-20.13	33.70	27.03	6.67	5.055	
1,100.00	1,098.57	1,098.91	1,097.49	3.70	3.70	86.82	38.49	-31.42	35.79	28.39	7.40	4.836	
1,134.94	1,133.20	1,133.78	1,132.05	3.83	3.83	87.04	39.72	-35.95	36.63	28.97	7.66	4.781	
1,200.00	1,197.62	1,201.18	1,196.47	4.08	4.09	87.66	42.05	-44.53	38.22	30.05	8.16	4.682	
1,300.00	1,296.64	1,301.21	1,295.50	4.46	4.47	88.51	45.63	-57.73	40.66	31.73	8.93	4.554	
1,400.00	1,395.66	1,401.24	1,394.53	4.85	4.86	89.27	49.21	-70.92	43.12	33.41	9.70	4.444	
1,500.00	1,494.68	1,501.28	1,493.56	5.24	5.25	89.95	52.79	-84.12	45.58	35.09	10.48	4.349	
1,600.00	1,593.70	1,601.31	1,592.59	5.63	5.64	90.56	56.37	-97.31	48.04	36.78	11.26	4.265	
1,700.00	1,692.72	1,701.34	1,691.62	6.03	6.03	91.11	59.95	-110.50	50.51	38.46	12.05	4.191	
1,800.00	1,791.74	1,801.37	1,790.65	6.42	6.43	91.61	63.52	-123.70	52.99	40.14	12.84	4.126	
1,900.00	1,890.75	1,901.40	1,889.68	6.82	6.82	92.06	67.10	-136.89	55.46	41.83	13.64	4.067	
2,000.00	1,989.78	2,001.43	1,988.71	7.22	7.22	92.47	70.68	-150.09	57.95	43.51	14.43	4.015	
2,100.00	2,088.80	2,101.47	2,087.74	7.62	7.62	92.85	74.26	-163.28	60.43	45.20	15.23	3.968	
2,200.00	2,187.83	2,201.50	2,186.77	8.02	8.02	93.20	77.84	-176.47	62.92	46.89	16.03	3.925	
2,300.00	2,286.85	2,301.53	2,285.80	8.42	8.42	93.53	81.42	-189.67	65.41	48.57	16.83	3.886	
2,400.00	2,385.87	2,401.56	2,384.82	8.82	8.82	93.83	85.00	-202.86	67.90	50.26	17.63	3.851	
2,500.00	2,484.89	2,501.59	2,483.85	9.23	9.22	94.11	88.58	-216.06	70.39	51.95	18.44	3.818	
2,600.00	2,583.91	2,601.62	2,582.88	9.63	9.62	94.37	92.16	-229.25	72.88	53.64	19.24	3.788	
2,700.00	2,682.93	2,701.66	2,681.91	10.04	10.02	94.61	95.74	-242.45	75.38	55.34	20.04	3.761	
2,800.00	2,781.95	2,801.69	2,780.94	10.44	10.42	94.84	99.32	-255.64	77.88	57.03	20.85	3.735	
2,900.00	2,880.97	2,901.72	2,879.97	10.84	10.82	95.05	102.90	-268.83	80.37	58.72	21.65	3.712	
3,000.00	2,979.99	3,001.75	2,979.00	11.25	11.23	95.25	106.48	-282.03	82.87	60.41	22.46	3.690	
3,100.00	3,079.01	3,101.78	3,078.03	11.65	11.63	95.44	110.06	-295.22	85.37	62.11	23.27	3.669	
3,200.00	3,178.03	3,201.81	3,177.06	12.06	12.03	95.61	113.64	-308.42	87.87	63.80	24.07	3.650	
3,300.00	3,277.06	3,301.85	3,276.09	12.47	12.44	95.78	117.22	-321.61	90.37	65.49	24.88	3.632	
3,400.00	3,376.08	3,401.88	3,375.12	12.87	12.84	95.94	120.80	-334.80	92.88	67.19	25.69	3.616	
3,500.00	3,475.10	3,501.91	3,474.15	13.28	13.24	96.09	124.37	-348.00	95.38	68.88	26.50	3.600	
3,600.00	3,574.12	3,601.94	3,573.17	13.68	13.65	96.23	127.95	-361.19	97.88	70.58	27.30	3.585	
3,700.00	3,673.14	3,701.97	3,672.20	14.09	14.05	96.37	131.53	-374.39	100.39	72.28	28.11	3.571	
3,800.00	3,772.16	3,802.00	3,771.23	14.50	14.45	96.50	135.11	-387.58	102.89	73.97	28.92	3.558	
3,900.00	3,871.18	3,902.03	3,870.26	14.90	14.86	96.62	138.69	-400.78	105.40	75.67	29.73	3.545	
4,000.00	3,970.20	4,002.07	3,969.29	15.31	15.26	96.74	142.27	-413.97	107.90	77.36	30.54	3.533	
4,100.00	4,069.22	4,102.10	4,068.32	15.72	15.67	96.85	145.85	-427.16	110.41	79.06	31.35	3.522	
4,200.00	4,168.24	4,202.13	4,167.35	16.12	16.07	96.96	149.43	-440.36	112.92	80.76	32.16	3.511	
4,300.00	4,267.26	4,302.16	4,266.38	16.53	16.47	97.06	153.01	-453.55	115.42	82.46	32.97	3.501	
4,400.00	4,366.29	4,402.19	4,365.41	16.94	16.88	97.16	156.59	-466.75	117.93	84.15	33.78	3.492	
4,440.92	4,406.80	4,438.71	4,405.93	17.10	17.03	97.19	158.05	-472.15	118.96	84.87	34.09	3.490	
4,500.00	4,465.37	4,502.22	4,464.44	17.34	17.28	97.06	160.17	-479.94	120.38	85.80	34.58	3.481	
4,600.00	4,564.74	4,602.29	4,563.44	17.73	17.69	95.86	163.75	-493.13	122.57	87.18	35.39	3.464	
4,700.00	4,664.38	4,697.76	4,662.58	18.11	18.07	93.66	167.24	-506.00	124.58	88.42	36.15	3.446	
4,800.00	4,764.20	4,798.06	4,762.28	18.46	18.46	91.37	170.14	-516.69	126.35	89.44	36.91	3.423	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #206H - Lateral - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,864.14	4,898.51	4,862.37	18.81	18.84	89.13	172.35	-524.85	127.85	90.22	37.62	3.398	
4,975.86	4,940.00	4,974.81	4,938.52	19.06	19.11	2.24	173.57	-529.36	128.80	90.66	38.14	3.377	
5,000.00	4,964.14	4,999.11	4,962.79	19.14	19.20	1.74	173.88	-530.48	129.06	90.76	38.30	3.370	
5,100.00	5,064.14	5,099.90	5,063.53	19.45	19.55	0.37	174.71	-533.56	129.83	90.88	38.96	3.333	
5,200.00	5,164.14	5,200.51	5,164.14	19.78	19.87	0.09	174.89	-534.19	130.00	90.40	39.60	3.283	
5,300.00	5,264.14	5,300.51	5,264.14	20.10	20.20	0.09	174.89	-534.19	130.00	89.75	40.25	3.230	
5,400.00	5,364.14	5,400.51	5,364.14	20.42	20.52	0.09	174.89	-534.19	130.00	89.11	40.89	3.179	
5,500.00	5,464.14	5,500.51	5,464.14	20.74	20.85	0.09	174.89	-534.19	130.00	88.46	41.54	3.129	
5,600.00	5,564.14	5,600.51	5,564.14	21.07	21.17	0.09	174.89	-534.19	130.00	87.81	42.19	3.081	
5,700.00	5,664.14	5,700.51	5,664.14	21.40	21.50	0.09	174.89	-534.19	130.00	87.15	42.85	3.034	
5,800.00	5,764.14	5,800.51	5,764.14	21.72	21.83	0.09	174.89	-534.19	130.00	86.50	43.50	2.988	
5,900.00	5,864.14	5,900.51	5,864.14	22.05	22.15	0.09	174.89	-534.19	130.00	85.84	44.16	2.944	
6,000.00	5,964.14	6,000.51	5,964.14	22.38	22.48	0.09	174.89	-534.19	130.00	85.18	44.82	2.900	
6,100.00	6,064.14	6,100.51	6,064.14	22.71	22.81	0.09	174.89	-534.19	130.00	84.52	45.48	2.858	
6,200.00	6,164.14	6,200.51	6,164.14	23.04	23.15	0.09	174.89	-534.19	130.00	83.85	46.15	2.817	
6,300.00	6,264.14	6,300.51	6,264.14	23.38	23.48	0.09	174.89	-534.19	130.00	83.19	46.81	2.777	
6,400.00	6,364.14	6,400.51	6,364.14	23.71	23.81	0.09	174.89	-534.19	130.00	82.52	47.48	2.738	
6,500.00	6,464.14	6,500.51	6,464.14	24.04	24.14	0.09	174.89	-534.19	130.00	81.86	48.14	2.700	
6,600.00	6,564.14	6,600.51	6,564.14	24.38	24.48	0.09	174.89	-534.19	130.00	81.19	48.81	2.663	
6,700.00	6,664.14	6,700.51	6,664.14	24.71	24.81	0.09	174.89	-534.19	130.00	80.52	49.48	2.627	
6,800.00	6,764.14	6,800.51	6,764.14	25.05	25.15	0.09	174.89	-534.19	130.00	79.84	50.16	2.592	
6,900.00	6,864.14	6,900.51	6,864.14	25.38	25.49	0.09	174.89	-534.19	130.00	79.17	50.83	2.558	
7,000.00	6,964.14	7,000.51	6,964.14	25.72	25.82	0.09	174.89	-534.19	130.00	78.50	51.50	2.524	
7,100.00	7,064.14	7,100.51	7,064.14	26.06	26.16	0.09	174.89	-534.19	130.00	77.82	52.18	2.492	
7,200.00	7,164.14	7,200.51	7,164.14	26.39	26.50	0.09	174.89	-534.19	130.00	77.15	52.85	2.460	
7,300.00	7,264.14	7,300.51	7,264.14	26.73	26.84	0.09	174.89	-534.19	130.00	76.47	53.53	2.429	
7,400.00	7,364.14	7,400.51	7,364.14	27.07	27.18	0.09	174.89	-534.19	130.00	75.79	54.21	2.398	
7,500.00	7,464.14	7,500.51	7,464.14	27.41	27.52	0.09	174.89	-534.19	130.00	75.11	54.89	2.368	
7,600.00	7,564.14	7,600.51	7,564.14	27.75	27.86	0.09	174.89	-534.19	130.00	74.43	55.57	2.339	
7,700.00	7,664.14	7,700.51	7,664.14	28.09	28.20	0.09	174.89	-534.19	130.00	73.75	56.25	2.311	
7,800.00	7,764.14	7,800.51	7,764.14	28.43	28.54	0.09	174.89	-534.19	130.00	73.07	56.93	2.283	
7,900.00	7,864.14	7,900.51	7,864.14	28.77	28.88	0.09	174.89	-534.19	130.00	72.39	57.61	2.256	
8,000.00	7,964.14	8,000.51	7,964.14	29.11	29.22	0.09	174.89	-534.19	130.00	71.70	58.30	2.230	
8,100.00	8,064.14	8,100.51	8,064.14	29.46	29.56	0.09	174.89	-534.19	130.00	71.02	58.98	2.204	
8,200.00	8,164.14	8,200.51	8,164.14	29.80	29.90	0.09	174.89	-534.19	130.00	70.33	59.67	2.179	
8,300.00	8,264.14	8,300.51	8,264.14	30.14	30.25	0.09	174.89	-534.19	130.00	69.65	60.35	2.154	
8,400.00	8,364.14	8,400.51	8,364.14	30.49	30.59	0.09	174.89	-534.19	130.00	68.96	61.04	2.130	
8,500.00	8,464.14	8,500.51	8,464.14	30.83	30.93	0.09	174.89	-534.19	130.00	68.27	61.73	2.106	
8,600.00	8,564.14	8,600.51	8,564.14	31.17	31.28	0.09	174.89	-534.19	130.00	67.58	62.42	2.083	
8,700.00	8,664.14	8,700.51	8,664.14	31.52	31.62	0.09	174.89	-534.19	130.00	66.89	63.11	2.060	
8,800.00	8,764.14	8,800.51	8,764.14	31.86	31.97	0.09	174.89	-534.19	130.00	66.21	63.79	2.038	
8,900.00	8,864.14	8,900.51	8,864.14	32.21	32.31	0.09	174.89	-534.19	130.00	65.52	64.48	2.016	
9,000.00	8,964.14	9,000.51	8,964.14	32.55	32.66	0.09	174.89	-534.19	130.00	64.82	65.18	1.995	
9,100.00	9,064.14	9,100.51	9,064.14	32.90	33.00	0.09	174.89	-534.19	130.00	64.13	65.87	1.974	
9,200.00	9,164.14	9,200.51	9,164.14	33.24	33.35	0.09	174.89	-534.19	130.00	63.44	66.56	1.953	
9,300.00	9,264.14	9,300.51	9,264.14	33.59	33.69	0.09	174.89	-534.19	130.00	62.75	67.25	1.933	
9,400.00	9,364.14	9,403.11	9,366.24	33.93	34.02	3.82	173.53	-525.82	128.95	61.02	67.92	1.898	
9,456.06	9,420.20	9,458.42	9,420.20	34.13	34.17	9.20	171.60	-513.88	128.36	60.07	68.29	1.880	SF
9,500.00	9,464.14	9,499.87	9,459.72	34.28	34.29	14.74	169.61	-501.59	129.04	60.55	68.49	1.884	
9,600.00	9,564.14	9,586.35	9,538.73	34.63	34.51	29.47	164.02	-467.08	139.17	71.30	67.87	2.051	
9,700.00	9,664.14	9,660.85	9,601.92	34.97	34.70	43.26	157.72	-428.23	166.96	102.04	64.92	2.572	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #206H - Lateral - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,800.00	9,764.14	9,723.68	9,650.88	35.32	34.88	53.69	151.43	-389.39	212.62	151.88	60.74	3.501	
9,900.00	9,864.14	9,776.21	9,688.29	35.67	35.03	60.97	145.54	-353.03	271.94	215.14	56.79	4.788	
10,000.00	9,964.14	9,820.08	9,716.85	36.02	35.18	66.01	140.22	-320.17	340.79	287.22	53.57	6.362	
10,100.00	10,064.14	9,850.00	9,734.83	36.36	35.29	68.95	136.40	-296.56	416.40	365.82	50.58	8.233	
10,200.00	10,164.14	9,887.90	9,755.77	36.71	35.45	72.18	131.35	-265.39	496.60	447.47	49.13	10.108	
10,300.00	10,264.14	9,914.31	9,769.10	37.06	35.57	74.14	127.71	-242.89	580.43	532.78	47.65	12.180	
10,400.00	10,364.14	9,936.95	9,779.69	37.41	35.67	75.65	124.51	-223.13	666.94	620.40	46.53	14.332	
10,412.10	10,376.24	9,950.00	9,785.43	37.45	35.74	76.46	122.63	-211.56	677.74	630.88	46.86	14.464	
10,450.00	10,414.11	9,950.00	9,785.43	37.58	35.74	-12.19	122.63	-211.56	710.42	664.27	46.15	15.394	
10,500.00	10,463.79	9,950.00	9,785.43	37.73	35.74	-10.65	122.63	-211.56	752.43	707.19	45.24	16.633	
10,550.00	10,512.81	9,971.41	9,794.26	37.88	35.86	-8.77	119.51	-192.31	792.39	747.33	45.06	17.587	
10,600.00	10,560.79	9,984.44	9,799.28	38.02	35.93	-7.57	117.59	-180.45	830.54	785.99	44.55	18.643	
10,650.00	10,607.36	10,000.00	9,804.91	38.16	36.02	-6.57	115.27	-166.12	866.62	822.52	44.10	19.652	
10,700.00	10,652.18	10,000.00	9,804.91	38.30	36.02	-6.06	115.27	-166.12	900.72	857.48	43.25	20.826	
10,750.00	10,694.89	10,026.88	9,813.70	38.43	36.19	-5.19	111.21	-141.05	932.13	889.05	43.08	21.638	
10,800.00	10,735.18	10,054.41	9,821.46	38.57	36.37	-4.48	106.99	-114.99	961.58	918.69	42.89	22.421	
10,850.00	10,772.74	10,054.41	9,821.46	38.71	36.37	-4.24	106.99	-114.99	988.15	945.99	42.16	23.438	

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #222H - Lateral - Plan #2 — Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-0.02	90.01	-0.04	90.01				
100.00	100.00	100.00	100.00	0.13	0.13	-0.02	90.01	-0.04	90.01	89.75	0.26	351.165	
200.00	200.00	200.00	200.00	0.49	0.49	-0.02	90.01	-0.04	90.01	89.03	0.97	92.480	
300.00	300.00	300.00	300.00	0.85	0.85	-0.02	90.01	-0.04	90.01	88.32	1.69	53.252	
400.00	400.00	400.00	400.00	1.20	1.20	-0.02	90.01	-0.04	90.01	87.60	2.41	37.391	
500.00	500.00	500.00	500.00	1.56	1.56	-0.02	90.01	-0.04	90.01	86.88	3.12	28.810	
600.00	600.00	600.00	600.00	1.92	1.92	-0.02	90.01	-0.04	90.01	86.17	3.84	23.433	CC, ES
700.00	699.99	698.44	698.43	2.27	2.27	85.38	90.86	-0.98	90.76	86.22	4.54	19.981	
800.00	799.91	796.84	796.75	2.62	2.62	85.97	93.40	-3.80	93.03	87.79	5.24	17.759	
900.00	899.69	895.16	894.87	2.97	2.97	86.90	97.64	-8.51	96.82	90.88	5.94	16.298	
1,000.00	999.27	993.37	992.67	3.33	3.33	88.07	103.55	-15.07	102.18	95.53	6.65	15.361	
1,100.00	1,098.57	1,108.18	1,090.47	3.70	3.75	89.43	111.12	-23.47	109.07	101.63	7.44	14.666	
1,134.94	1,133.20	1,126.64	1,125.03	3.83	3.82	90.08	113.97	-26.64	111.65	104.01	7.64	14.621	
1,200.00	1,197.62	1,208.54	1,189.36	4.08	4.13	91.43	119.28	-32.53	116.50	108.32	8.19	14.231	
1,300.00	1,296.64	1,291.10	1,288.25	4.46	4.44	93.28	127.43	-41.58	124.07	115.19	8.88	13.976	
1,400.00	1,395.66	1,409.27	1,387.14	4.85	4.89	94.93	135.59	-50.63	131.76	122.05	9.71	13.570	
1,500.00	1,494.68	1,509.63	1,486.03	5.24	5.27	96.39	143.75	-59.69	139.54	129.06	10.48	13.316	
1,600.00	1,593.70	1,609.99	1,584.92	5.63	5.66	97.69	151.90	-68.74	147.40	136.15	11.25	13.099	
1,700.00	1,692.72	1,689.64	1,683.81	6.03	5.96	98.87	160.06	-77.79	155.33	143.38	11.95	12.998	
1,800.00	1,791.74	1,789.28	1,782.70	6.42	6.35	99.93	168.21	-86.84	163.32	150.59	12.73	12.834	
1,900.00	1,890.76	1,888.92	1,881.59	6.82	6.73	100.89	176.37	-95.90	171.36	157.85	13.50	12.690	
2,000.00	1,989.78	1,988.56	1,980.48	7.22	7.12	101.76	184.52	-104.95	179.44	165.15	14.28	12.563	
2,100.00	2,088.80	2,088.19	2,079.37	7.62	7.51	102.56	192.68	-114.00	187.56	172.49	15.06	12.451	
2,200.00	2,187.83	2,187.83	2,178.26	8.02	7.89	103.29	200.84	-123.05	195.71	179.86	15.85	12.351	
2,300.00	2,286.85	2,287.47	2,277.14	8.42	8.28	103.97	208.99	-132.11	203.89	187.26	16.63	12.261	
2,400.00	2,385.87	2,387.10	2,376.03	8.82	8.67	104.59	217.15	-141.16	212.10	194.69	17.41	12.181	
2,500.00	2,484.89	2,486.74	2,474.92	9.23	9.06	105.16	225.30	-150.21	220.33	202.14	18.20	12.108	
2,600.00	2,583.91	2,586.38	2,573.81	9.63	9.45	105.70	233.46	-159.26	228.59	209.60	18.98	12.042	
2,700.00	2,682.93	2,686.02	2,672.70	10.04	9.84	106.19	241.61	-168.32	236.86	217.09	19.77	11.982	
2,800.00	2,781.95	2,785.65	2,771.59	10.44	10.23	106.66	249.77	-177.37	245.14	224.59	20.55	11.927	
2,900.00	2,880.97	2,885.29	2,870.48	10.84	10.62	107.09	257.93	-186.42	253.44	232.10	21.34	11.877	
3,000.00	2,979.99	2,984.93	2,969.37	11.25	11.01	107.49	266.08	-195.48	261.76	239.63	22.13	11.831	
3,100.00	3,079.01	3,084.56	3,068.26	11.65	11.40	107.87	274.24	-204.53	270.09	247.17	22.91	11.788	
3,200.00	3,178.03	3,184.20	3,167.15	12.06	11.79	108.23	282.39	-213.58	278.42	254.73	23.70	11.748	
3,300.00	3,277.06	3,283.84	3,266.04	12.47	12.18	108.57	290.55	-222.63	286.77	262.29	24.49	11.712	
3,400.00	3,376.08	3,383.48	3,364.93	12.87	12.57	108.89	298.70	-231.69	295.13	269.86	25.27	11.677	
3,500.00	3,475.10	3,483.11	3,463.82	13.28	12.96	109.19	306.86	-240.74	303.50	277.44	26.06	11.646	
3,600.00	3,574.12	3,582.75	3,562.71	13.68	13.35	109.47	315.02	-249.79	311.87	285.02	26.85	11.616	
3,700.00	3,673.14	3,682.39	3,661.59	14.09	13.74	109.74	323.17	-258.84	320.25	292.62	27.64	11.588	
3,800.00	3,772.16	3,782.02	3,760.48	14.50	14.13	109.99	331.33	-267.90	328.64	300.22	28.42	11.562	
3,900.00	3,871.18	3,881.66	3,859.37	14.90	14.52	110.24	339.48	-276.95	337.03	307.82	29.21	11.537	
4,000.00	3,970.20	3,981.30	3,958.26	15.31	14.91	110.47	347.64	-286.00	345.43	315.43	30.00	11.514	
4,100.00	4,069.22	4,080.94	4,057.15	15.72	15.31	110.69	355.79	-295.05	353.84	323.05	30.79	11.492	
4,200.00	4,168.24	4,180.57	4,156.04	16.12	15.70	110.90	363.95	-304.11	362.25	330.67	31.58	11.472	
4,300.00	4,267.26	4,280.21	4,254.93	16.53	16.09	111.10	372.11	-313.16	370.66	338.30	32.37	11.452	
4,400.00	4,366.29	4,379.85	4,353.82	16.94	16.48	111.29	380.26	-322.21	379.08	345.93	33.15	11.434	
4,440.92	4,406.80	4,420.62	4,394.28	17.10	16.64	111.37	383.60	-325.92	382.53	349.05	33.48	11.427	
4,500.00	4,465.37	4,479.50	4,452.73	17.34	16.87	111.48	388.42	-331.27	387.34	353.40	33.94	11.412	
4,600.00	4,564.74	4,579.22	4,551.69	17.73	17.26	111.37	396.58	-340.33	394.72	360.00	34.72	11.369	
4,700.00	4,664.38	4,678.93	4,650.66	18.11	17.66	110.91	404.74	-349.39	401.18	365.69	35.49	11.305	
4,800.00	4,764.20	4,778.58	4,749.56	18.46	18.05	110.11	412.90	-358.44	406.76	370.52	36.24	11.224	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #222H - Lateral - Plan #2 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HDGM — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,864.14	4,878.09	4,848.33	18.81	18.44	108.98	421.05	-367.48	411.59	374.60	36.99	11.128	
4,975.86	4,940.00	4,953.45	4,923.12	19.06	18.74	22.72	427.21	-374.33	414.83	377.29	37.54	11.051	
5,000.00	4,964.14	4,977.41	4,946.90	19.14	18.83	22.34	429.18	-376.50	415.82	378.11	37.71	11.027	
5,100.00	5,064.14	5,076.66	5,045.40	19.45	19.22	20.78	437.30	-385.52	420.12	381.70	38.43	10.933	
5,200.00	5,164.14	5,175.91	5,143.91	19.78	19.61	19.25	445.42	-394.54	424.74	385.60	39.14	10.852	
5,300.00	5,264.14	5,275.16	5,242.41	20.10	20.00	17.75	453.55	-403.56	429.65	389.80	39.85	10.782	
5,400.00	5,364.14	5,374.41	5,340.92	20.42	20.39	16.29	461.67	-412.57	434.85	394.29	40.56	10.721	
5,500.00	5,464.14	5,473.66	5,439.42	20.74	20.78	14.87	469.80	-421.59	440.32	399.06	41.27	10.671	
5,600.00	5,564.14	5,572.91	5,537.93	21.07	21.17	13.48	477.92	-430.61	446.07	404.10	41.97	10.628	
5,700.00	5,664.14	5,672.16	5,636.43	21.40	21.56	12.12	486.04	-439.63	452.07	409.40	42.67	10.594	
5,800.00	5,764.14	5,771.41	5,734.93	21.72	21.95	10.81	494.17	-448.64	458.32	414.95	43.37	10.567	
5,900.00	5,864.14	5,870.66	5,833.44	22.05	22.34	9.52	502.29	-457.66	464.81	420.74	44.07	10.547	
6,000.00	5,964.14	5,969.91	5,931.94	22.38	22.73	8.28	510.42	-466.68	471.53	426.76	44.77	10.532	
6,100.00	6,064.14	6,069.16	6,030.45	22.71	23.12	7.06	518.54	-475.70	478.47	433.00	45.47	10.523	
6,200.00	6,164.14	6,168.40	6,128.95	23.04	23.51	5.89	526.66	-484.71	485.61	439.45	46.16	10.520	
6,300.00	6,264.14	6,267.65	6,227.46	23.38	23.91	4.75	534.79	-493.73	492.95	446.10	46.86	10.520	
6,400.00	6,364.14	6,366.90	6,325.96	23.71	24.30	3.64	542.91	-502.75	500.49	452.94	47.55	10.525	
6,500.00	6,464.14	6,466.15	6,424.47	24.04	24.69	2.56	551.04	-511.77	508.21	459.95	48.25	10.534	
6,600.00	6,564.14	6,569.50	6,527.07	24.38	25.09	1.50	559.31	-520.95	515.93	466.97	48.96	10.537	
6,700.00	6,664.14	6,678.80	6,635.87	24.71	25.51	0.62	566.33	-528.74	522.24	472.53	49.71	10.506	
6,800.00	6,764.14	6,788.62	6,745.43	25.05	25.91	0.02	571.28	-534.24	526.73	476.29	50.43	10.444	
6,900.00	6,864.14	6,898.78	6,855.50	25.38	26.29	-0.32	574.13	-537.40	529.32	478.18	51.14	10.350	
7,000.00	6,964.14	7,007.42	6,964.14	25.72	26.66	-0.41	574.88	-538.23	530.01	478.18	51.82	10.227	
7,100.00	7,064.14	7,107.42	7,064.14	26.06	26.98	-0.41	574.88	-538.23	530.01	477.51	52.50	10.096	
7,200.00	7,164.14	7,207.42	7,164.14	26.39	27.31	-0.41	574.88	-538.23	530.01	476.84	53.17	9.968	
7,300.00	7,264.14	7,307.42	7,264.14	26.73	27.64	-0.41	574.88	-538.23	530.01	476.16	53.85	9.843	
7,400.00	7,364.14	7,407.42	7,364.14	27.07	27.98	-0.41	574.88	-538.23	530.01	475.48	54.52	9.721	
7,500.00	7,464.14	7,507.42	7,464.14	27.41	28.31	-0.41	574.88	-538.23	530.01	474.81	55.20	9.602	
7,600.00	7,564.14	7,607.42	7,564.14	27.75	28.64	-0.41	574.88	-538.23	530.01	474.13	55.88	9.485	
7,700.00	7,664.14	7,707.42	7,664.14	28.09	28.97	-0.41	574.88	-538.23	530.01	473.45	56.56	9.371	
7,800.00	7,764.14	7,807.42	7,764.14	28.43	29.31	-0.41	574.88	-538.23	530.01	472.77	57.24	9.260	
7,900.00	7,864.14	7,907.42	7,864.14	28.77	29.64	-0.41	574.88	-538.23	530.01	472.09	57.92	9.151	
8,000.00	7,964.14	8,007.42	7,964.14	29.11	29.97	-0.41	574.88	-538.23	530.01	471.41	58.60	9.044	
8,100.00	8,064.14	8,107.42	8,064.14	29.46	30.31	-0.41	574.88	-538.23	530.01	470.72	59.28	8.940	
8,200.00	8,164.14	8,207.42	8,164.14	29.80	30.64	-0.41	574.88	-538.23	530.01	470.04	59.97	8.838	
8,300.00	8,264.14	8,307.42	8,264.14	30.14	30.98	-0.41	574.88	-538.23	530.01	469.36	60.65	8.739	
8,400.00	8,364.14	8,407.42	8,364.14	30.49	31.32	-0.41	574.88	-538.23	530.01	468.67	61.34	8.641	
8,500.00	8,464.14	8,507.42	8,464.14	30.83	31.65	-0.41	574.88	-538.23	530.01	467.99	62.02	8.546	
8,600.00	8,564.14	8,607.42	8,564.14	31.17	31.99	-0.41	574.88	-538.23	530.01	467.30	62.71	8.452	
8,700.00	8,664.14	8,707.42	8,664.14	31.52	32.33	-0.41	574.88	-538.23	530.01	466.61	63.40	8.360	
8,800.00	8,764.14	8,807.42	8,764.14	31.86	32.67	-0.41	574.88	-538.23	530.01	465.92	64.08	8.271	
8,900.00	8,864.14	8,907.42	8,864.14	32.21	33.01	-0.41	574.88	-538.23	530.01	465.24	64.77	8.183	
9,000.00	8,964.14	9,007.42	8,964.14	32.55	33.35	-0.41	574.88	-538.23	530.01	464.55	65.46	8.097	
9,100.00	9,064.14	9,107.42	9,064.14	32.90	33.69	-0.41	574.88	-538.23	530.01	463.86	66.15	8.012	
9,200.00	9,164.14	9,207.42	9,164.14	33.24	34.03	-0.41	574.88	-538.23	530.01	463.17	66.84	7.929	
9,300.00	9,264.14	9,307.42	9,264.14	33.59	34.37	-0.41	574.88	-538.23	530.01	462.48	67.53	7.848	
9,400.00	9,364.14	9,407.42	9,364.14	33.93	34.71	-0.41	574.88	-538.23	530.01	461.79	68.22	7.769	
9,500.00	9,464.14	9,507.42	9,464.14	34.28	35.05	-0.41	574.88	-538.23	530.01	461.09	68.91	7.691	
9,600.00	9,564.14	9,607.42	9,564.14	34.63	35.39	-0.41	574.88	-538.23	530.01	460.40	69.61	7.614	
9,700.00	9,664.14	9,707.42	9,664.14	34.97	35.73	-0.41	574.88	-538.23	530.01	459.71	70.30	7.539	
9,800.00	9,764.14	9,807.42	9,764.14	35.32	36.08	-0.41	574.88	-538.23	530.01	459.01	70.99	7.466	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #222H - Lateral - Plan #2

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,900.00	9,864.14	9,907.42	9,864.14	35.67	36.42	-0.41	574.88	-538.23	530.01	458.32	71.69	7.393	
10,000.00	9,964.14	10,007.42	9,964.14	36.02	36.76	-0.41	574.88	-538.23	530.01	457.63	72.38	7.323	
10,100.00	10,064.14	10,107.42	10,064.14	36.36	37.10	-0.41	574.88	-538.23	530.01	456.93	73.07	7.253	
10,200.00	10,164.14	10,207.42	10,164.14	36.71	37.45	-0.41	574.88	-538.23	530.01	456.24	73.77	7.185	
10,300.00	10,264.14	10,307.42	10,264.14	37.06	37.79	-0.41	574.88	-538.23	530.01	455.54	74.47	7.118	
10,310.27	10,274.41	10,317.70	10,274.41	37.10	37.83	-0.41	574.88	-538.23	530.01	455.47	74.54	7.111	
10,400.00	10,364.14	10,405.47	10,362.18	37.41	38.13	-0.40	574.91	-538.06	530.04	454.88	75.16	7.052	
10,412.10	10,376.24	10,416.09	10,372.80	37.45	38.16	-0.36	574.96	-537.70	530.10	454.86	75.24	7.046	
10,450.00	10,414.11	10,449.30	10,405.91	37.58	38.26	-90.27	575.34	-535.33	530.52	455.04	75.48	7.029	
10,500.00	10,463.79	10,493.01	10,449.19	37.73	38.40	-90.03	576.29	-529.34	531.61	455.84	75.78	7.016	
10,550.00	10,512.81	10,536.64	10,491.80	37.88	38.52	-89.78	577.74	-520.12	533.30	457.25	76.05	7.013	
10,600.00	10,560.79	10,580.20	10,533.51	38.02	38.64	-89.54	579.70	-507.76	535.57	459.27	76.30	7.019	
10,650.00	10,607.36	10,623.71	10,574.10	38.16	38.75	-89.30	582.14	-492.31	538.40	461.86	76.54	7.034	
10,700.00	10,652.18	10,667.20	10,613.38	38.30	38.86	-89.06	585.06	-473.88	541.77	465.01	76.77	7.057	
10,750.00	10,694.89	10,710.70	10,651.13	38.43	38.96	-88.82	588.43	-452.56	545.66	468.67	76.99	7.088	
10,800.00	10,735.18	10,754.23	10,687.16	38.57	39.05	-88.59	592.25	-428.45	550.04	472.83	77.21	7.124	
10,850.00	10,772.74	10,797.82	10,721.28	38.71	39.14	-88.36	596.48	-401.68	554.88	477.43	77.45	7.165	
10,900.00	10,807.27	10,841.49	10,753.30	38.87	39.23	-88.15	601.12	-372.35	560.15	482.45	77.71	7.209	
10,950.00	10,838.53	10,885.29	10,783.05	39.04	39.32	-87.94	606.14	-340.61	565.83	487.83	78.00	7.254	
11,000.00	10,866.27	10,929.25	10,810.35	39.24	39.42	-87.74	611.52	-306.60	571.86	493.54	78.33	7.301	
11,050.00	10,890.29	10,973.40	10,835.03	39.46	39.53	-87.55	617.24	-270.45	578.23	499.52	78.71	7.346	
11,100.00	10,910.39	11,017.79	10,856.93	39.72	39.66	-87.38	623.27	-232.33	584.89	505.74	79.15	7.390	
11,150.00	10,926.42	11,062.45	10,875.88	40.01	39.82	-87.22	629.59	-192.40	591.81	512.15	79.65	7.430	
11,200.00	10,938.27	11,107.44	10,891.73	40.34	40.01	-87.07	636.17	-150.83	598.93	518.71	80.22	7.466	
11,212.10	10,940.49	11,118.38	10,895.09	40.43	40.06	-87.04	637.80	-140.54	600.69	520.32	80.37	7.474	
11,250.00	10,946.33	11,153.17	10,904.46	40.71	40.24	-87.12	643.03	-107.45	606.25	525.40	80.85	7.498	
11,300.00	10,951.75	11,200.24	10,914.95	41.12	40.52	-87.23	650.20	-62.14	613.70	532.14	81.56	7.524	
11,350.00	10,954.57	11,247.55	10,923.20	41.56	40.85	-87.34	657.48	-16.13	621.24	538.91	82.34	7.545	
11,378.77	10,955.00	11,274.89	10,926.91	41.83	41.05	-87.40	661.71	10.63	625.61	542.80	82.82	7.554	
11,400.00	10,955.00	11,295.15	10,929.16	42.03	41.21	-87.62	664.86	30.51	628.86	545.68	83.18	7.560	
11,500.00	10,955.00	11,391.52	10,934.00	43.10	42.05	-88.11	679.89	125.54	644.45	559.38	85.07	7.575	
11,600.00	10,955.00	11,542.09	10,934.00	44.33	43.67	-88.16	697.52	275.03	656.33	568.33	88.00	7.458	
11,700.00	10,955.00	11,694.57	10,934.00	45.70	45.64	-88.18	703.32	427.36	660.30	569.03	91.27	7.235	
11,702.62	10,955.00	11,698.57	10,934.00	45.74	45.70	-88.18	703.30	431.36	660.29	568.94	91.36	7.228	
11,800.00	10,955.00	11,805.60	10,934.00	47.21	47.29	-88.18	703.15	527.19	660.30	565.89	94.40	6.994	
11,900.00	10,955.00	11,905.60	10,934.00	48.83	48.89	-88.18	702.99	627.19	660.30	562.68	97.62	6.764	
12,000.00	10,955.00	12,005.60	10,934.00	50.56	50.60	-88.18	702.83	727.19	660.30	559.25	101.05	6.534	
12,100.00	10,955.00	12,105.60	10,934.00	52.38	52.40	-88.18	702.67	827.19	660.30	555.62	104.68	6.308	
12,200.00	10,955.00	12,205.60	10,934.00	54.29	54.30	-88.18	702.51	927.19	660.30	551.82	108.48	6.087	
12,300.00	10,955.00	12,305.60	10,934.00	56.29	56.27	-88.18	702.34	1,027.19	660.30	547.85	112.45	5.872	
12,400.00	10,955.00	12,405.60	10,934.00	58.35	58.31	-88.18	702.18	1,127.19	660.30	543.75	116.55	5.665	
12,500.00	10,955.00	12,505.60	10,934.00	60.47	60.42	-88.18	702.02	1,227.19	660.30	539.52	120.78	5.467	
12,600.00	10,955.00	12,605.60	10,934.00	62.65	62.59	-88.18	701.86	1,327.19	660.30	535.18	125.13	5.277	
12,700.00	10,955.00	12,705.60	10,934.00	64.89	64.80	-88.18	701.70	1,427.19	660.30	530.73	129.57	5.096	
12,800.00	10,955.00	12,805.60	10,934.00	67.16	67.07	-88.18	701.53	1,527.19	660.30	526.19	134.12	4.923	
12,900.00	10,955.00	12,905.60	10,934.00	69.48	69.37	-88.18	701.37	1,627.19	660.30	521.56	138.74	4.759	
13,000.00	10,955.00	13,005.60	10,934.00	71.84	71.72	-88.18	701.21	1,727.19	660.31	516.87	143.44	4.603	
13,100.00	10,955.00	13,105.60	10,934.00	74.23	74.09	-88.18	701.05	1,827.19	660.31	512.10	148.21	4.455	
13,200.00	10,955.00	13,205.60	10,934.00	76.65	76.50	-88.18	700.89	1,927.19	660.31	507.27	153.04	4.315	
13,300.00	10,955.00	13,305.60	10,934.00	79.10	78.94	-88.18	700.72	2,027.19	660.31	502.38	157.92	4.181	
13,400.00	10,955.00	13,405.60	10,934.00	81.57	81.41	-88.18	700.56	2,127.19	660.31	497.45	162.86	4.054	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDD

Anticollision Report

Company:	MATADOR RESOURCES	**Local Co-ordinate Reference:**	Well #226H - Slot #226H
Project:	Eddy County, New Mexico	**TVD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Reference Site:	Garrett Fed Com #202H, #222H, #122H, #206H, #226H	**MD Reference:**	2920+28.50 @ 2948.50usft (Patterson 282)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	#226H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Lateral	**Database:**	EDM 5000 14 Multi User
Reference Design:	Plan #2	**Offset TVD Reference:**	Reference Datum

Offset Design Garrett Fed Com #202H, #222H, #122H, #206H, #226H - #222H - Lateral - Plan #2

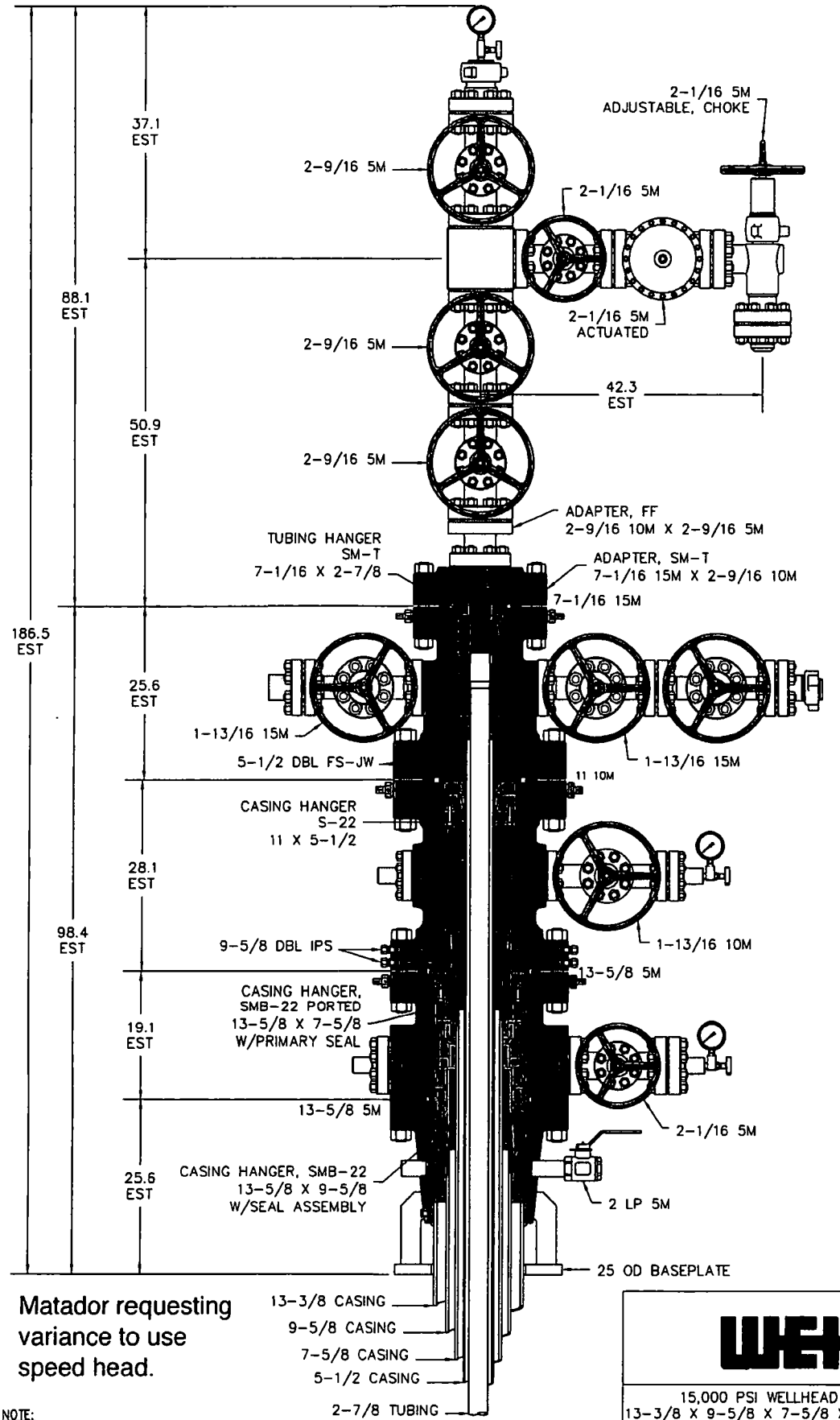
Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HDGM

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,500.00	10,955.00	13,505.60	10,934.00	84.07	83.89	-88.18	700.40	2,227.19	660.31	492.46	167.85	3.934	
13,600.00	10,955.00	13,605.60	10,934.00	86.59	86.40	-88.18	700.24	2,327.19	660.31	487.44	172.87	3.820	
13,700.00	10,955.00	13,705.60	10,934.00	89.13	88.93	-88.18	700.08	2,427.19	660.31	482.37	177.94	3.711	
13,800.00	10,955.00	13,805.60	10,934.00	91.68	91.48	-88.18	699.91	2,527.19	660.31	477.27	183.04	3.607	
13,900.00	10,955.00	13,905.60	10,934.00	94.25	94.04	-88.18	699.75	2,627.19	660.31	472.14	188.18	3.509	
14,000.00	10,955.00	14,005.60	10,934.00	96.84	96.62	-88.18	699.59	2,727.19	660.31	466.97	193.34	3.415	
14,100.00	10,955.00	14,105.60	10,934.00	99.44	99.21	-88.18	699.43	2,827.19	660.31	461.78	198.53	3.326	
14,200.00	10,955.00	14,205.60	10,934.00	102.05	101.82	-88.18	699.27	2,927.19	660.31	456.56	203.75	3.241	
14,300.00	10,955.00	14,305.60	10,934.00	104.68	104.44	-88.18	699.10	3,027.19	660.31	451.32	208.99	3.159	
14,400.00	10,955.00	14,405.60	10,934.00	107.31	107.07	-88.18	698.94	3,127.19	660.31	446.06	214.26	3.082	
14,500.00	10,955.00	14,505.60	10,934.00	109.96	109.71	-88.18	698.78	3,227.19	660.31	440.77	219.54	3.008	
14,600.00	10,955.00	14,605.60	10,934.00	112.61	112.36	-88.18	698.62	3,327.19	660.31	435.47	224.85	2.937	
14,700.00	10,955.00	14,705.60	10,934.00	115.28	115.02	-88.18	698.46	3,427.19	660.31	430.15	230.17	2.869	
14,800.00	10,955.00	14,805.60	10,934.00	117.95	117.68	-88.18	698.29	3,527.19	660.32	424.81	235.51	2.804	
14,900.00	10,955.00	14,905.60	10,934.00	120.63	120.36	-88.18	698.13	3,627.18	660.32	419.46	240.86	2.741	
15,000.00	10,955.00	15,005.60	10,934.00	123.31	123.04	-88.18	697.97	3,727.18	660.32	414.09	246.23	2.682	
15,100.00	10,955.00	15,105.60	10,934.00	126.01	125.73	-88.18	697.81	3,827.18	660.32	408.71	251.61	2.624	
15,200.00	10,955.00	15,205.60	10,934.00	128.71	128.43	-88.18	697.64	3,927.18	660.32	403.31	257.00	2.569	
15,300.00	10,955.00	15,305.60	10,934.00	131.41	131.13	-88.18	697.48	4,027.18	660.32	397.91	262.41	2.516	
15,400.00	10,955.00	15,405.60	10,934.00	134.12	133.83	-88.18	697.32	4,127.18	660.32	392.49	267.83	2.465	
15,500.00	10,955.00	15,505.60	10,934.00	136.84	136.55	-88.18	697.16	4,227.18	660.32	387.07	273.25	2.417	
15,600.00	10,955.00	15,605.60	10,934.00	139.56	139.26	-88.18	697.00	4,327.18	660.32	381.63	278.69	2.369	
15,700.00	10,955.00	15,694.40	10,934.00	142.29	141.68	-88.18	696.83	4,427.18	660.32	376.49	283.83	2.326	
15,701.05	10,955.00	15,695.44	10,934.00	142.32	141.71	-88.18	696.83	4,428.23	660.32	376.43	283.89	2.326	
15,720.48	10,955.00	15,711.79	10,934.00	142.85	142.16	-88.18	696.81	4,444.58	660.33	375.44	284.88	2.318 SF	

MATADOR PRODUCTION COMPANY



Matador requesting variance to use speed head.

NOTE:
DIMENSIONS SHOWN ON THIS DRAWING ARE ESTIMATES ONLY AND CAN VARY SIGNIFICANTLY DEPENDING ON RAW MATERIAL LENGTHS.
NO GUARANTEE OF STACKUP HEIGHT IS IMPLIED.
DIMENSIONS SHOWN SHOULD BE CONSIDERED FOR REFERENCE PURPOSES ONLY.

WEIR

15,000 PSI WELLHEAD ASSEMBLY
13-3/8 X 9-5/8 X 7-5/8 X 5-1/2 X 2-7/8

DRAWN BY: RPL	SCALE 1-11	DATE 06OCT17	REV
CHECKED BY:	DRAWING NO. P-22401		
APPROVED BY:			

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

DATA ARE INFORMATIVE ONLY.
BASED ON SI_PD-101836 P&B

VAM® HTF-NR™
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	P110 EC	6.750 in.	VAM® HTF NR

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	Enhanced API
Min. Yield Strength	125 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	135 ksi
Tensile Yield Strength	1 068 klb
Internal Yield Pressure	10 760 psi
Collapse pressure	7 360 psi

CONNECTION PROPERTIES	
Connection Type	Premium Integral Flush
Connection OD (nom)	7.701 in.
Connection ID (nom)	6.782 in.
Make-Up Loss	4.657 in.
Critical Cross Section	4.971 sqin.
Tension Efficiency	58 % of pipe
Compression Efficiency	72.7 % of pipe
Compression Efficiency with Sealability	34.8 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	619 klb
Compression Resistance	778 klb
Compression with Sealability	372 klb
Internal Yield Pressure	10 760 psi
External Pressure Resistance	7 360 psi
Max. Bending	44 °/100ft
Max. Bending with Sealability	17 °/100ft

TORQUE VALUES	
Min. Make-up torque	9 600 ft.lb
Opti. Make-up torque	11 300 ft.lb
Max. Make-up torque	13 000 ft.lb
Max. Torque with Sealability	58 500 ft.lb
Max. Torsional Value	73 000 ft.lb

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahea on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.

Do you need help on this product? - Remember no one knows VAM® like VAM®

canada@vamfieldservice.com *uk@vamfieldservice.com* *china@vamfieldservice.com*
usa@vamfieldservice.com *dubai@vamfieldservice.com* *baku@vamfieldservice.com*
mexico@vamfieldservice.com *nigeria@vamfieldservice.com* *singapore@vamfieldservice.com*
brazil@vamfieldservice.com *angola@vamfieldservice.com* *australia@vamfieldservice.com*

Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group

vallourec

For the latest performance data, always visit our website: www.tenaris.com

July 15 2015

Tenaris

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

PIPE BODY DATA

GEOMETRY

Nominal OD	**5.500** in.	Nominal Weight	**20.00** lbs/ft	Standard Drift Diameter	**4.653** in.
Nominal ID	**4.778** in.	Wall Thickness	**0.361** in.	Special Drift Diameter	**N/A**
Plain End Weight	**19.83** lbs/ft				

PERFORMANCE

Body Yield Strength	**641** x 1000 lbs	Internal Yield	**12630** psi	SMYS	**110000** psi
Collapse	**12100** psi				

TENARISXP™ BTC CONNECTION DATA

GEOMETRY

Connection OD	**6.100** in.	Coupling Length	**9.450** in.	Connection ID	**4.766** in.
Critical Section Area	**5.828** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**641** x 1000 lbs	Internal Pressure Capacity[1]	**12630** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**641** x 1000 lbs	Structural Bending[2]	**92** °/100 ft
External Pressure Capacity	**12100** psi				

ESTIMATED MAKE-UP TORQUES[3]

Minimum	**11270** ft-lbs	Optimum	**12520** ft-lbs	Maximum	**13770** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**21500** ft-lbs	Yield Torque	**23900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

(1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.

(2) Structural rating, pure bending to yield (i.e no other loads applied)

(3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.

For additional information, please contact us at contact-tenarishydril@tenaris.com

Matador Production Company **DRILL PLAN PAGE 1**
Garrett Fed Com 226H
SHL 2372' FNL & 584' FWL
BHL 2323' FNL & 240' FEL
Sec. 32, T. 24 S., R. 29 E., Eddy County, NM

Drilling Program

1. ESTIMATED TOPS

Formation Name	TVD	MD	Bearing
Quaternary	0'	0'	water
Rustler anhydrite	29'	29'	N/A
Salado salt	400'	400'	N/A
Castile anhydrite	1222'	1225'	N/A
Base salt	2795'	2813'	N/A
Bell Canyon sandstone	2849'	2868'	hydrocarbons
Cherry Canyon sandstone	3761'	3788'	hydrocarbons
Brushy Canyon sandstone	4928'	4963'	hydrocarbons
Bone Spring limestone	6569'	6615'	hydrocarbons
1st Bone Spring carbonate	7357'	7393'	hydrocarbons
1st Bone Spring sandstone	7524'	7560'	hydrocarbons
2nd Bone Spring carbonate	7790'	7826'	hydrocarbons
2nd Bone Spring sandstone	8294'	8330'	hydrocarbons
3rd Bone Spring carbonate	8640'	8676'	hydrocarbon
3rd Bone Spring sandstone	9382'	9418'	hydrocarbon
Wolfcamp A carbonate	9743'	9779'	hydrocarbon
Wolfcamp B carbonate (Goal)	10203'	10239'	hydrocarbons
(KOP	10376'	10412'	hydrocarbons)
TD	10955'	15720'	hydrocarbons

2. NOTABLE ZONES

Wolfcamp B is the goal. Hole will extend east of the last perforation point to allow for pump installation. All perforations will be ≥330' from the dedication perimeter. Closest water well (C 00856) is 4792' northwest. Depth to water was not reported in this 380' deep well.

3. PRESSURE CONTROL

A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attached BOP, choke manifold, co-flex hose, and speed head diagrams.

An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third-party company will test the BOPs.

After setting the surface casing, and before drilling the surface casing shoe, a minimum 2M BOPE system will be installed. It will be tested to 250 psi low and 2000 psi high. Annular will be tested to 250 psi low and 1000 psi high.

After setting intermediate 1 casing, a minimum 3M BOPE system will be installed and tested to 250 psi low and 3000 psi high. Annular will be tested to 250 psi low and 2500 psi high.

After setting intermediate 2 casing, a minimum 5M BOPE system will be installed and tested to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 2500 psi high.

Matador requests a variance to have the option of running a speed head for setting the intermediate 1 and 2 strings. In the case of running a speed head with landing mandrel for 9.625" and 7" casing, a minimum 3M BOPE system will be installed after surface casing is set. BOP test pressures will be 250 psi low and 3000 psi high. Annular will be tested to 250 psi low and 2500 psi high before drilling below the surface shoe. After 7" casing is set in the speed head, the BOP will then be lifted to install another casing head section for setting the production casing. Matador will nipple up the casing head and BOP and a minimum 5M BOPE system will be installed. Pressure tests will be made to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 2500 psi high. A diagram of the speed head is attached.

Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

4. CASING & CEMENT

All casing will be API and new. See attached casing assumption worksheet.

Hole O. D.	Set MD	Set TVD	Casing O. D.	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
17.5"	0' - 610'	0' - 610'	13.375" surface	54.5	J-55	BTC	1.125	1.125	1.8
12.25"	0' - 2900'	0' - 2881'	9.625" inter. 1	40	J-55	BTC	1.125	1.125	1.8
8.75"	0' - 2600'	0' – 2584'	7.625" inter. 2 top	29	P-110	BTC	1.125	1.125	1.8
8.75"	2600' – 10300'	2584' – 10264'	7.625" inter. 2 middle	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
8.75"	10300' – 11212'	10264' – 10940'	7.0" inter. 2 bottom	29.7	P-110	BTC	1.125	1.125	1.8
6.125"	0' – 10200'	0' – 10164'	5.5" product. top	20	P-110	BTC/TXP	1.125	1.125	1.8
6.125"	10200' – 15720'	10164' – 10955'	4.5" product. bottom	13.5	P-110	BTC/TXP	1.125	1.125	1.8

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Lead	268	1.82	487	12.8	Class C + bentonite + 2% $CaCl_2$ + 3% NaCl + LCM
	Tail	352	1.38	485	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			Centralizers per Onshore Order 2.III.B.1f	
Intermediate 1	Lead	638	2.13	1358	12.6	Class C + bentonite + 1% $CaCl_2$ + 8% NaCl + LCM
	Tail	202	1.38	278	14.8	Class C + 5% NaCl + LCM
TOC = GL		100% Excess			2 on btm jt, 1 on 2nd jt, 1 every 4th jt to surface	
Intermediate 2	Lead	700	2.13	1491	12.6	TXI + fluid loss + dispersant + retarder + LCM
	Tail	225	1.38	310	14.8	TXI + fluid loss + dispersant +

						retarder + LCM
TOC = 2600'		60% Excess			2 on btm jt, 1 on 2nd jt, 1 every other jt to top of tail cement (500' above TOC)	
Production	Tail	530	1.17	620	15.8	Class H + fluid loss + dispersant + retarder + LCM
TOC = 9900'		25% Excess			2 on btm jt, 1 on 2nd jt, 1 every third jt to top of curve	

5. MUD PROGRAM

An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. A closed loop system will be used.

Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
fresh water spud	0' - 610'	8.3	28	NC
brine water	610' - 2900'	10.0	30-32	NC
fresh water & cut brine	2900' - 11212'	9.0	30-31	NC
OBM	11212' - 15720'	12.5	50-60	<10

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud logging program will be used from ≈11,200' MD to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈7000 psi. Expected bottom hole temperature is ≈170° F.

In accordance with Onshore Order 6, Matador does not anticipate that there will be enough H_2S from the surface to the Bone Spring to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Since Matador has an H_2S safety package on all wells, an "H_2S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.

APD ID: 10400026769 **Submission Date:** 01/31/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Garrett_226H_Road_Map_20180131093204.pdf

Existing Road Purpose: ACCESS **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Garrett_226H_New_Road_Map_20180131093216.pdf

New road type: RESOURCE

Length: 764.14 Feet **Width (ft.):** 30

Max slope (%): 0 **Max grade (%):** 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Detour borrow ditch will be frequently riprapped to slow discharge. If riprap is unavailable, then sand bags will be used. Straw wattles and geotextile fabric will not be used.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: CALICHE

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Grader

Access other construction information: No new road is needed to access the pad. However, the pad will block the existing road that crosses the pad. That road provides access to Chevron and Judah oil wells in Section 31. A 764.14' permanent detour will be built north and west of Matador's pad. The 764.14' of new resource road will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 30'. Maximum grade = 4%. Maximum cut or fill = 3'.
Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: New road will be crowned and ditched. No culvert, cattle guard, or vehicle turn out is needed.
Road Drainage Control Structures (DCS) description: ROAD WILL BE CROWNED AND DITCHED. NO FURTHER DRAINAGE CONSTRUCTION ANTICIPATED. Roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed.
Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Garrett_226H_Well_Map_20180131093317.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: An existing tank battery on Matador's Garrett Fed Com 221H pad in NWNW 32-24s-29e will be used. Matador will bury 7 pipelines between the 122H pad and 221H pad. Five of the pipelines will be 3" O. D., X42 carbon steel, Schedule 80, MAOP 1440 psi, flow lines. Sixth pipeline will be a 2" O. D., X42 carbon steel, Schedule 80,

MAOP 1440 psi, gas lift supply line. Seventh pipeline will be 8.625" O. D., steel, 1.232" WT SDR-7, MAOP 200 psi, produced water pipeline. No power line is needed given the gas lift supply line. Pipelines will be buried with >48" of cover in a 75' x 2,047.64' long corridor.

Production Facilities map:

Garrett_226H_Production_Facilities_20180131093354.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 20000

Source volume (acre-feet): 2.577862

Source volume (gal): 840000

Water source and transportation map:

Garrett_226H_Water_Source_Map_20180131093431.pdf

Water source comments: Water will be trucked via existing roads from existing water well C 00464 on private land in NENW 13-24s-28e.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled east of the pad. V-door will face east. Closed loop drilling system will be used. Caliche will be hauled from an existing caliche pit on private (Calderon) land in NWNE 9-24s-28e. A berm will be built around the fill sides of the pad.
Construction Materials source location attachment:

Garrett_226H_Construction_Methods_20180131093534.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to a state approved disposal site, e. g., Petro Waste Environmental LP at Orla, Texas. (Texas Railroad Commission permit number STF-0101, P012234, P012236.)
Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel roll-off tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: Petro Waste Environmental LP at Orla, Texas. (Texas Railroad Commission permit number STF-0101, P012234, P012236.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Steel tanks

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Garrett_226H_Well_Site_Layout_20180131093618.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** GARRETT FED COM

Multiple Well Pad Number: 122H

Recontouring attachment:

Garrett_226H_Recontour_Plat_20180131093635.pdf

Garrett_226H_Interim_Reclamation_Diagram_20180131093646.pdf

Drainage/Erosion control construction: Crowned and ditched

Drainage/Erosion control reclamation: Harrowed on the contour

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Well pad proposed disturbance (acres): 3.65
Road proposed disturbance (acres): 0.53
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 3.53
Other proposed disturbance (acres): 0

Total proposed disturbance: 7.71

Well pad interim reclamation (acres): 1.91
Road interim reclamation (acres): 0.01
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 3.53
Other interim reclamation (acres): 0

Total interim reclamation: 5.45

Well pad long term disturbance (acres): 1.74
Road long term disturbance (acres): 0.52
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0

Total long term disturbance: 2.26

Disturbance Comments:

Reconstruction method: Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad 52% (1.91 acre) by removing caliche and reclaiming the west (10'), south (100'), and east (100') sides. A 20' dead end road on the west side of the pad will also be reclaimed. This will leave 1.74 acres for producing 5 wells and tractor-trailer turn around.
Topsoil redistribution: Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. Once the last well is plugged, then the rest of the pad and 764.14' of new road will be similarly reclaimed within 6 months of plugging. The old road will be re-opened. Noxious weeds will be controlled. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the State Land Office's requirements.
Soil treatment: None

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Seed Summary	
Seed Type	**Pounds/Acre**

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following NMSLO requirements and policies.
Weed treatment plan attachment:

Monitoring plan description: According to NMSLO requirements

Monitoring plan attachment:

Success standards: According to NMSLO requirements

Pit closure description: No pit

Pit closure attachment:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

[redacted]

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

[redacted]

Military Local Office:

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: GARRETT FED COM **Well Number:** 226H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

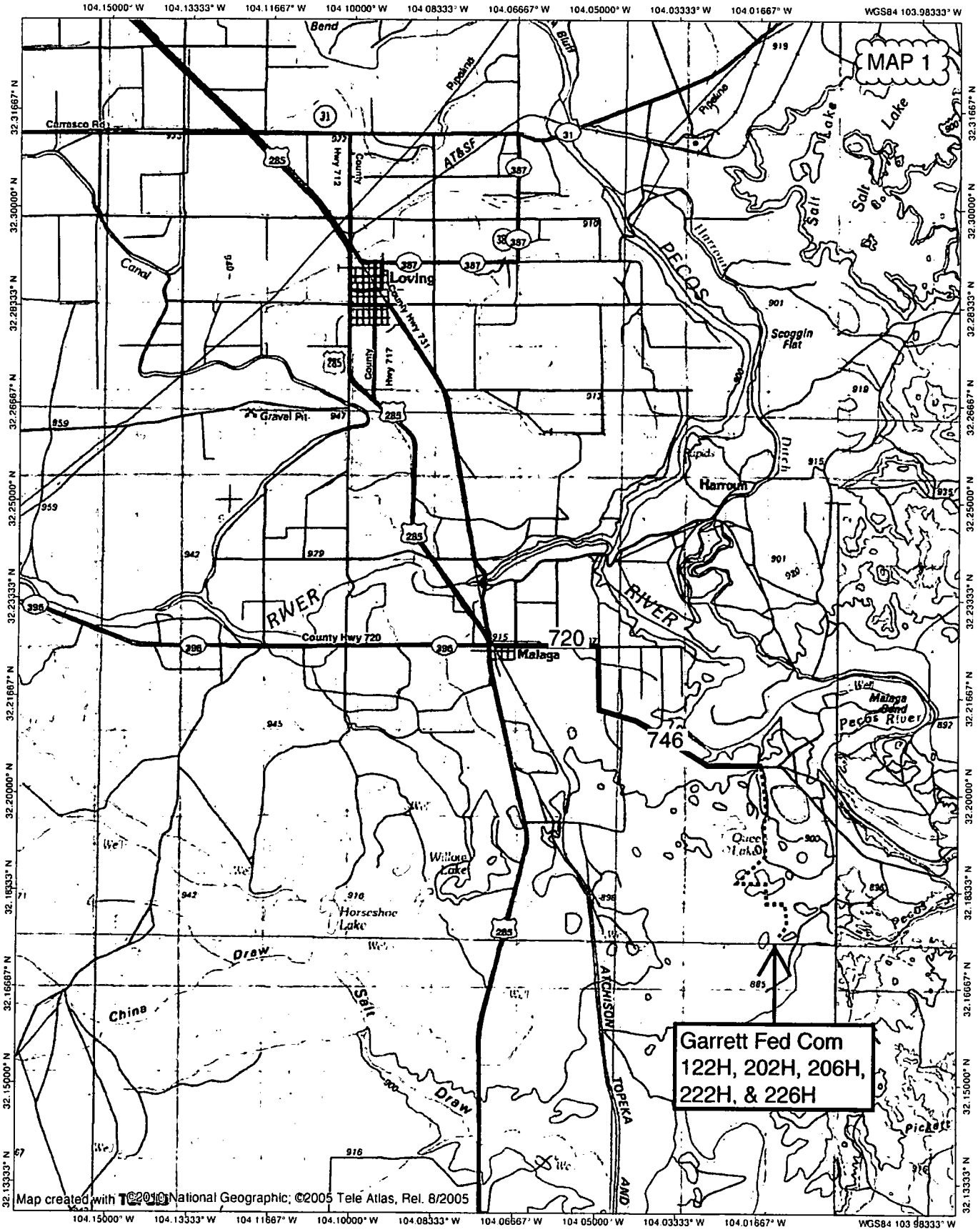
Use a previously conducted onsite? YES

Previous Onsite information: On-site inspection was held with Jim Goodbar, Vance Wolf, et al (BLM) on August 24, 2017.

Other SUPO Attachment

Garrett_226H_General_SUPO_20180131093825.pdf

Garrett_226H_Surface_Use_Agreement_20180131093835.pdf


TOPO! map printed on 01/15/18 from "Untitled.tpo"
MAP 1
Garrett Fed Com
122H, 202H, 206H,
222H, & 226H
Loving
Malaga
Harroun
Scoggin Flat
Gravel Pit
Willow Lake
Horseshoe Lake
Salt Lake
Malaga Bend
Pecos River
County Hwy 720
720
746
Map created with TOPO!
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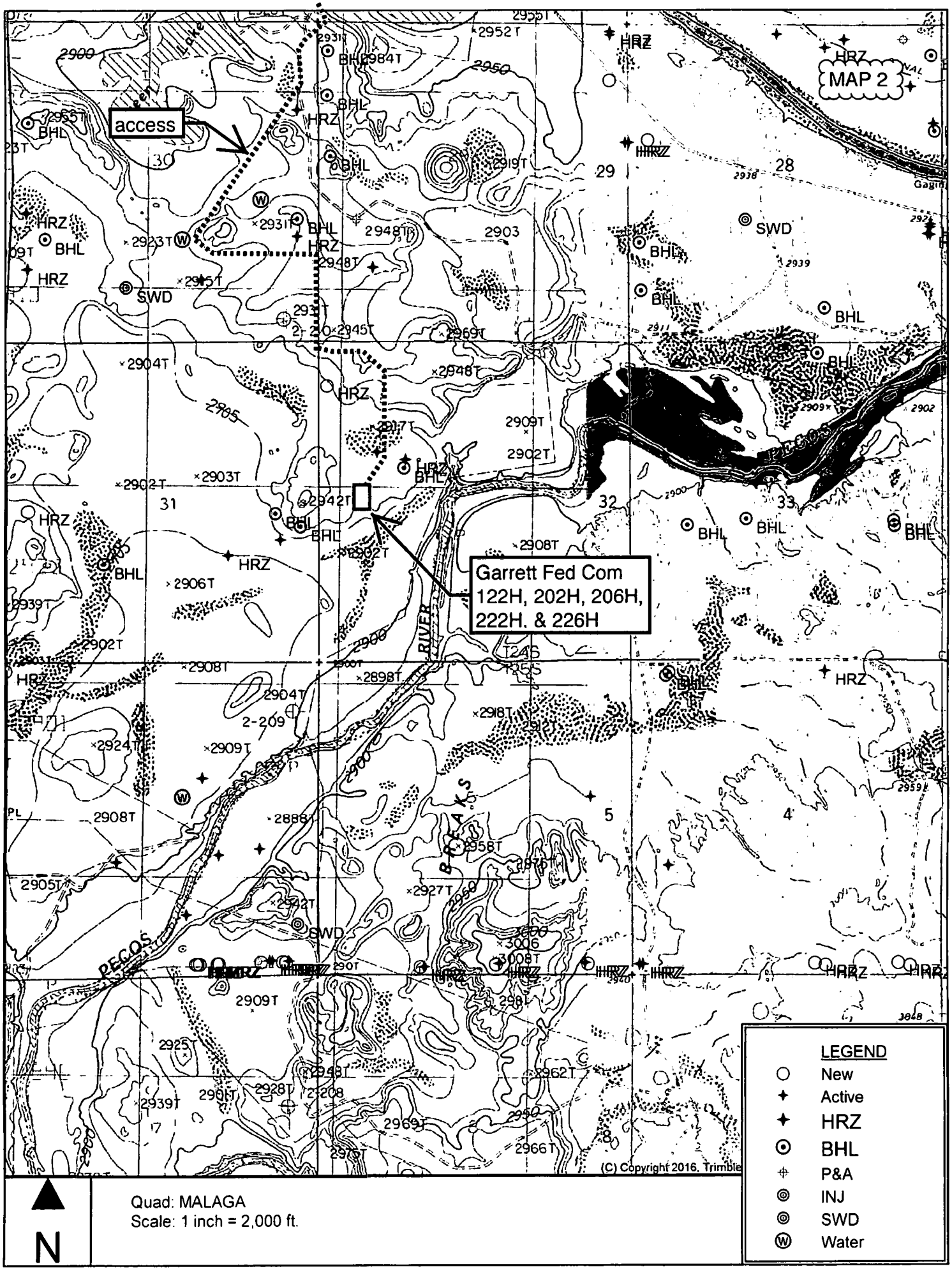
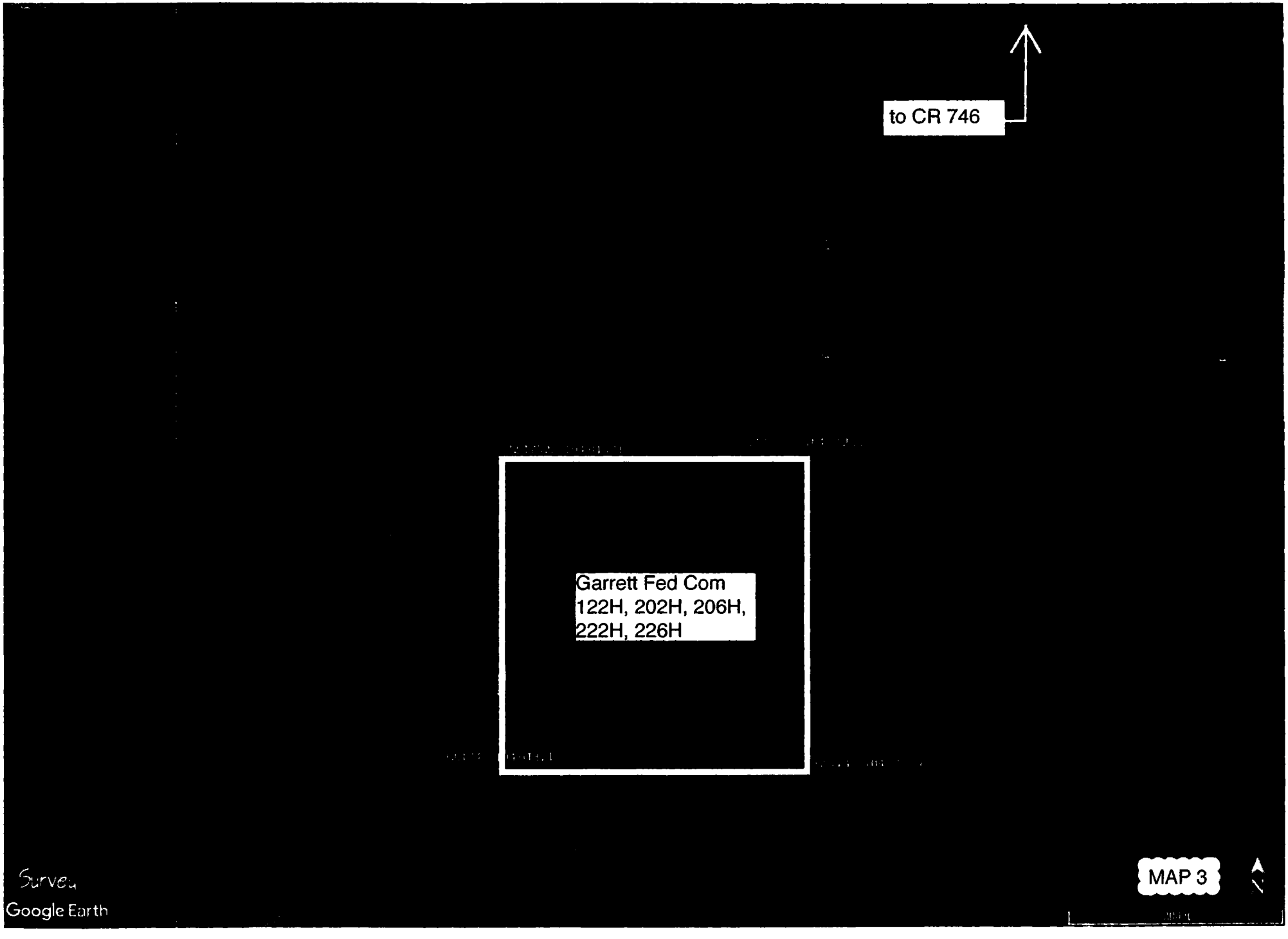

access
MAP 2
Garrett Fed Com
122H, 202H, 206H,
222H, & 226H
PECOS RIVER
Quad: MALAGA
Scale: 1 inch = 2,000 ft.
N
LEGEND
New
Active
HRZ
BHL
P&A
INJ
SWD
Water
(C) Copyright 2016. Trimble


to CR 746
Garrett Fed Com
122H, 202H, 206H,
222H, 226H
Surveyed
Google Earth
MAP 3

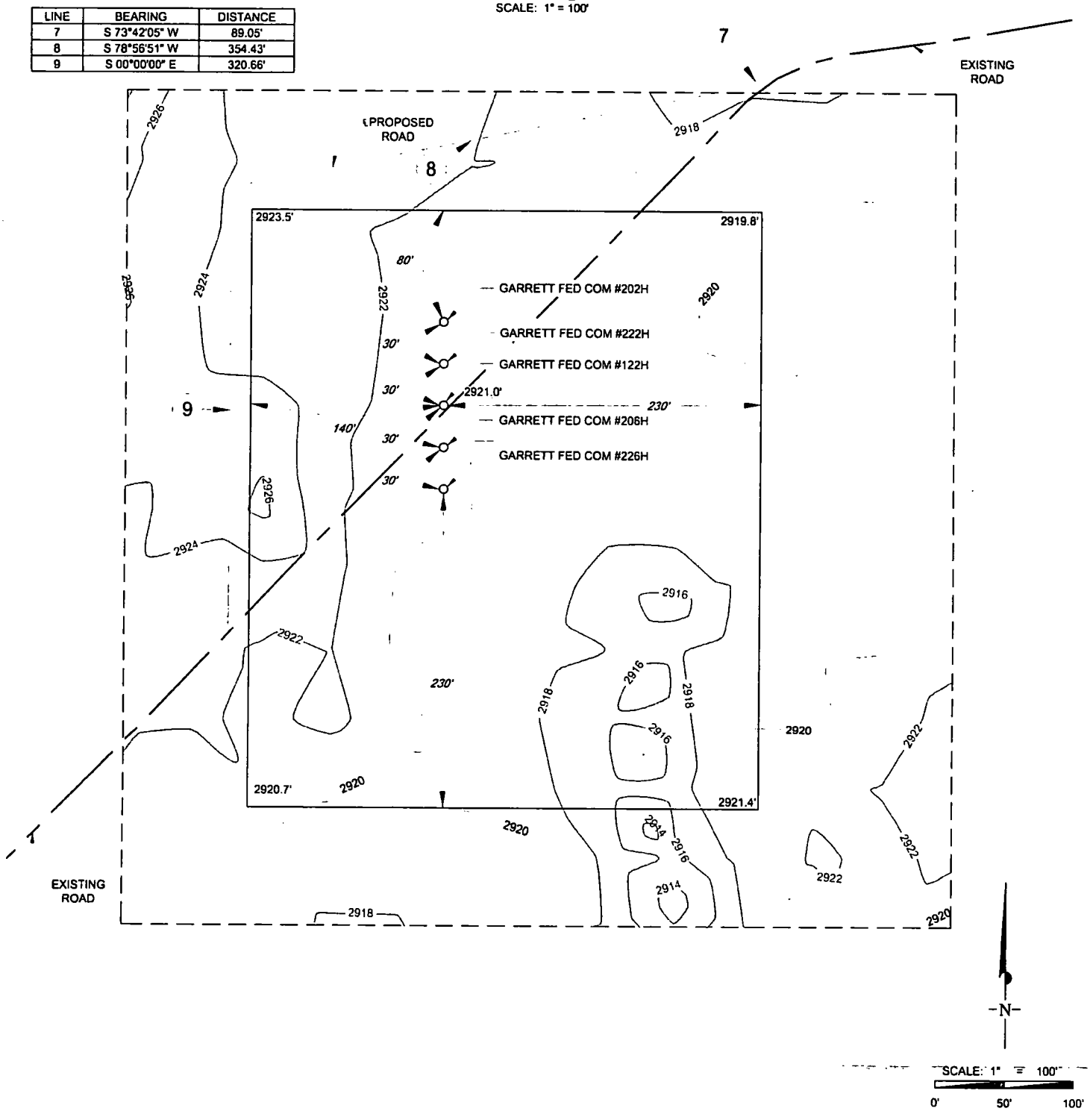
MAP 4

SECTION 32, TOWNSHIP 24S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'

PROPOSED ROAD LINE TABLE

LINE	BEARING	DISTANCE
7	S 73°42'05" W	89.05'
8	S 78°56'51" W	354.43'
9	S 00°00'00" E	320.66'



SCALE: 1" = 100'
0' 50' 100'

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THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY MATADOR PRODUCTION COMPANY. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

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Matador PRODUCTION COMPANY

MAP 4

SECTION 32, TOWNSHIP 24S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

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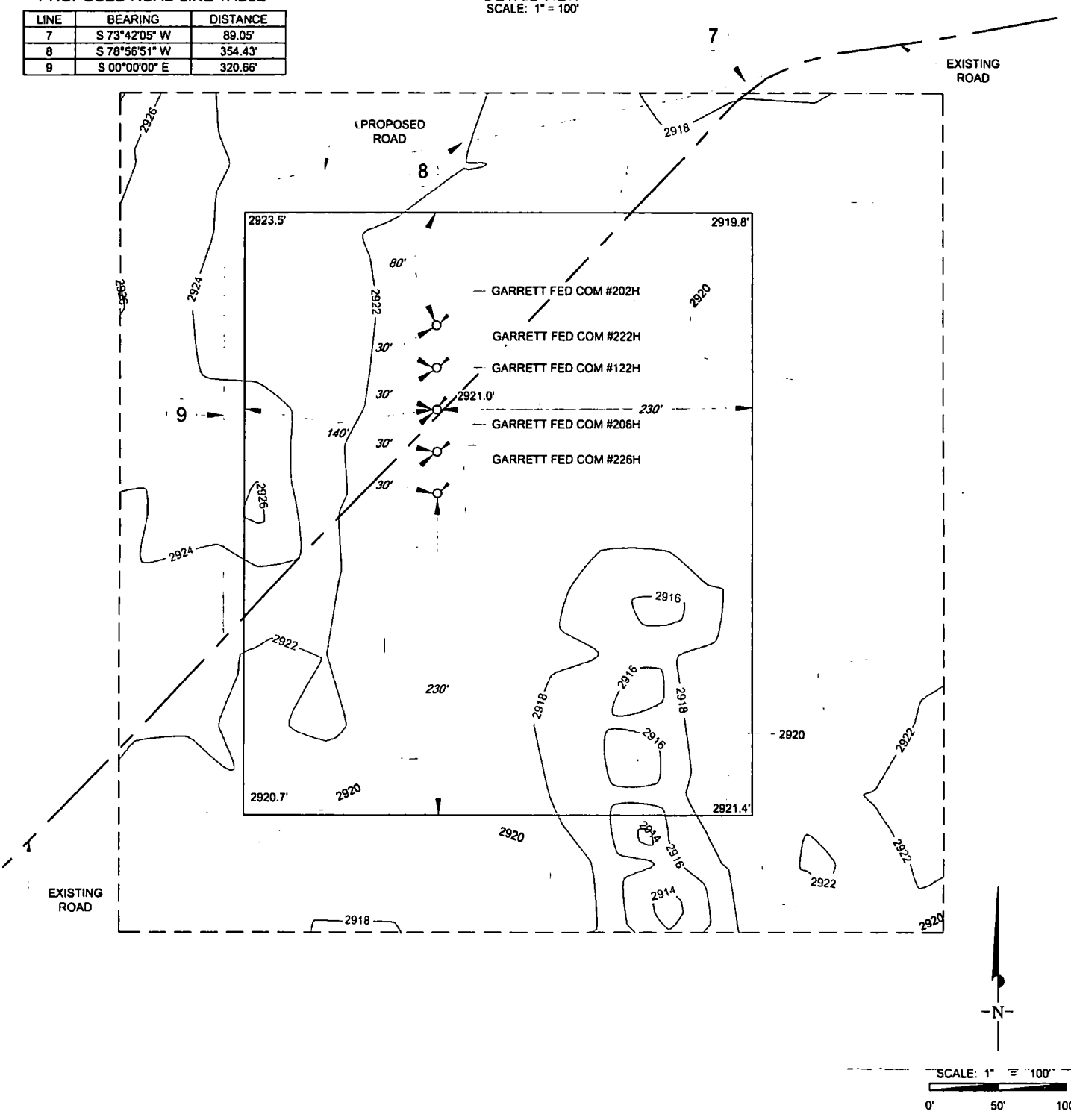
DETAIL VIEW
SCALE: 1" = 100'



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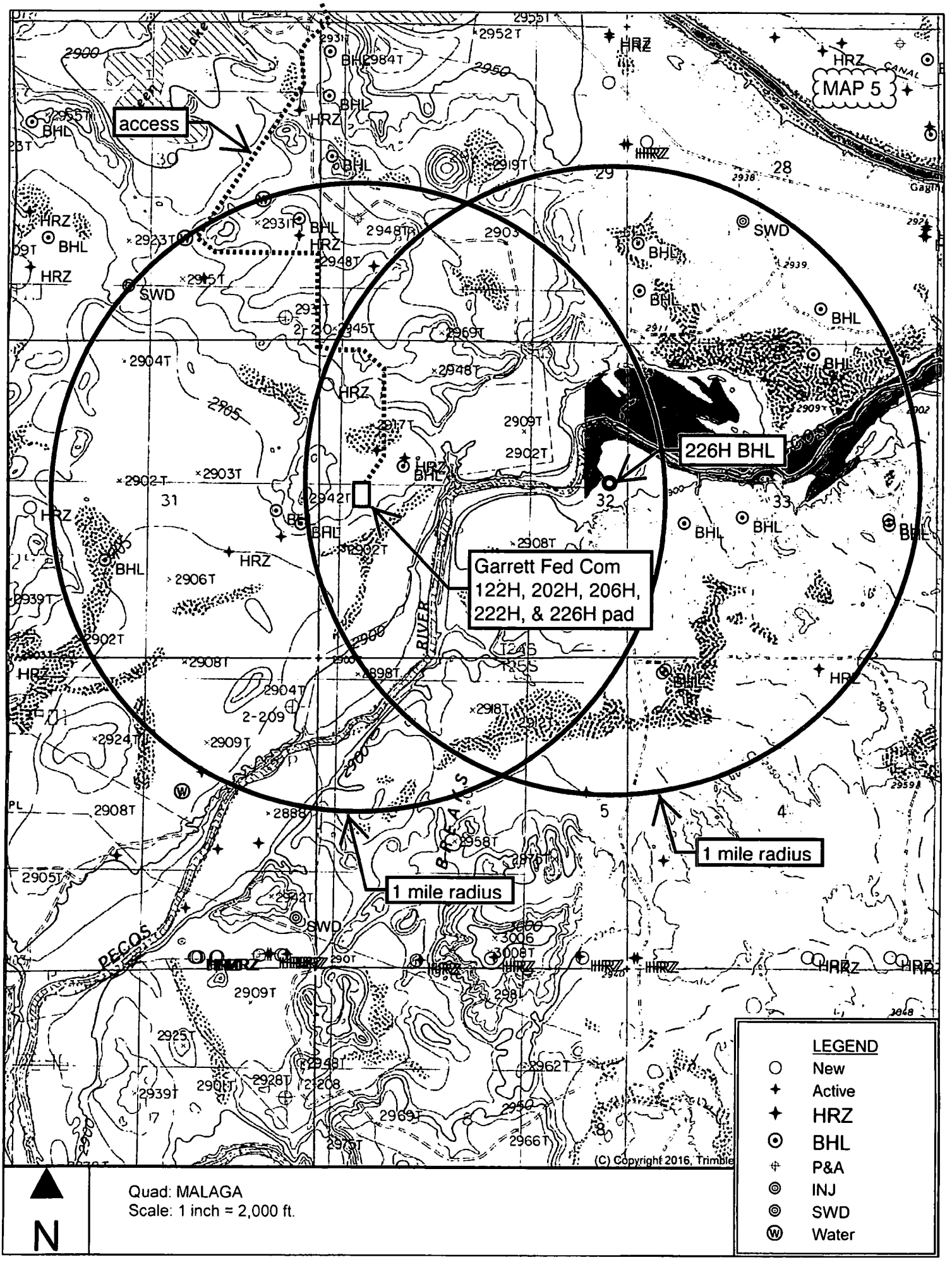
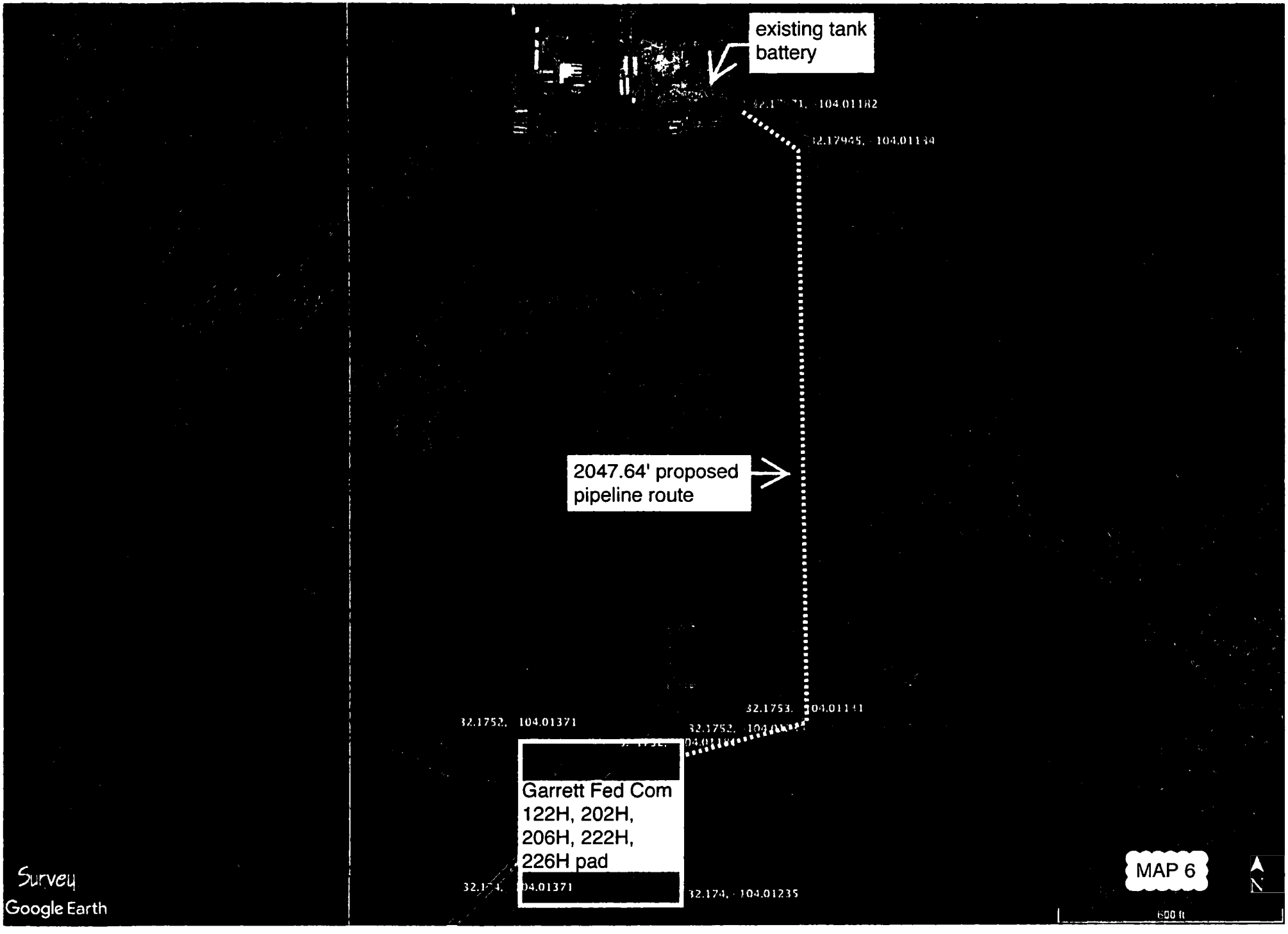
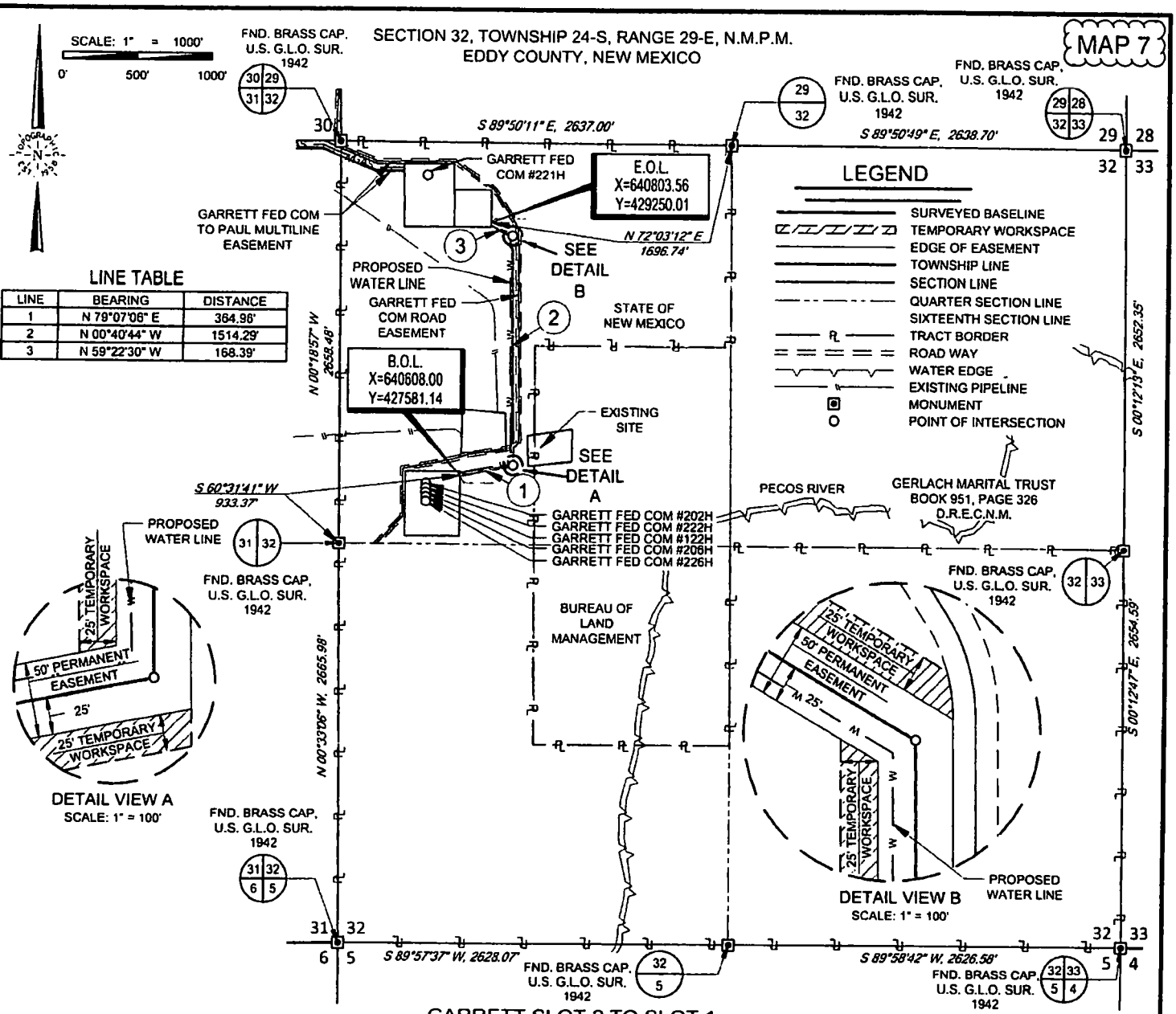

MAP 5
access
226H BHL
Garrett Fed Com
122H, 202H, 206H,
222H, & 226H pad
1 mile radius
1 mile radius
PECOS RIVER
(C) Copyright 2016, Trimble
LEGEND
New
Active
HRZ
BHL
P&A
INJ
SWD
Water
N
Quad: MALAGA
Scale: 1 inch = 2,000 ft.


existing tank battery
2047.64' proposed pipeline route
Garrett Fed Com 122H, 202H, 206H, 222H, 226H pad
MAP 6
Survey
Google Earth



GARRETT SLOT 2 TO SLOT 1 FLOWLINE EASEMENT

Being a proposed flowline easement being 50 feet in width, 25 feet left and right of the above platted centerline total line footage containing 2047.64 feet or 124.10 rods, containing 2.35 acres more or less, and being allocated by quarter-quarters as follows:

SW/4 NW/4 - 884.07 feet or 53.58 rods, containing 1.01 acres
NW/4 NW/4 - 1163.57 feet or 70.52 rods, containing 1.34 acres

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR 9/08/17

Matador PRODUCTION COMPANY

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Stan W. Lloyd, P.S. No. 19642
SEPTEMBER 08, 2017

GARRETT SLOT 2 TO SLOT 1 FLOWLINE EASEMENT	REVISION: INT	DATE
DATE: 09/08/17		
FILE: EP GARRETT SLOT 2 TO SLOT 1 FLOWLINE EASEMENT		
DRAWN BY: MML		
SHEET: 1 OF 1		

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4. B.O.L. = BEGINNING OF LINE
5. E.O.L. = END OF LINE
6. D.R.E.C.N.M. = DEED RECORDS EDDY COUNTY, NEW MEXICO
7. ADJOINER INFORMATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.

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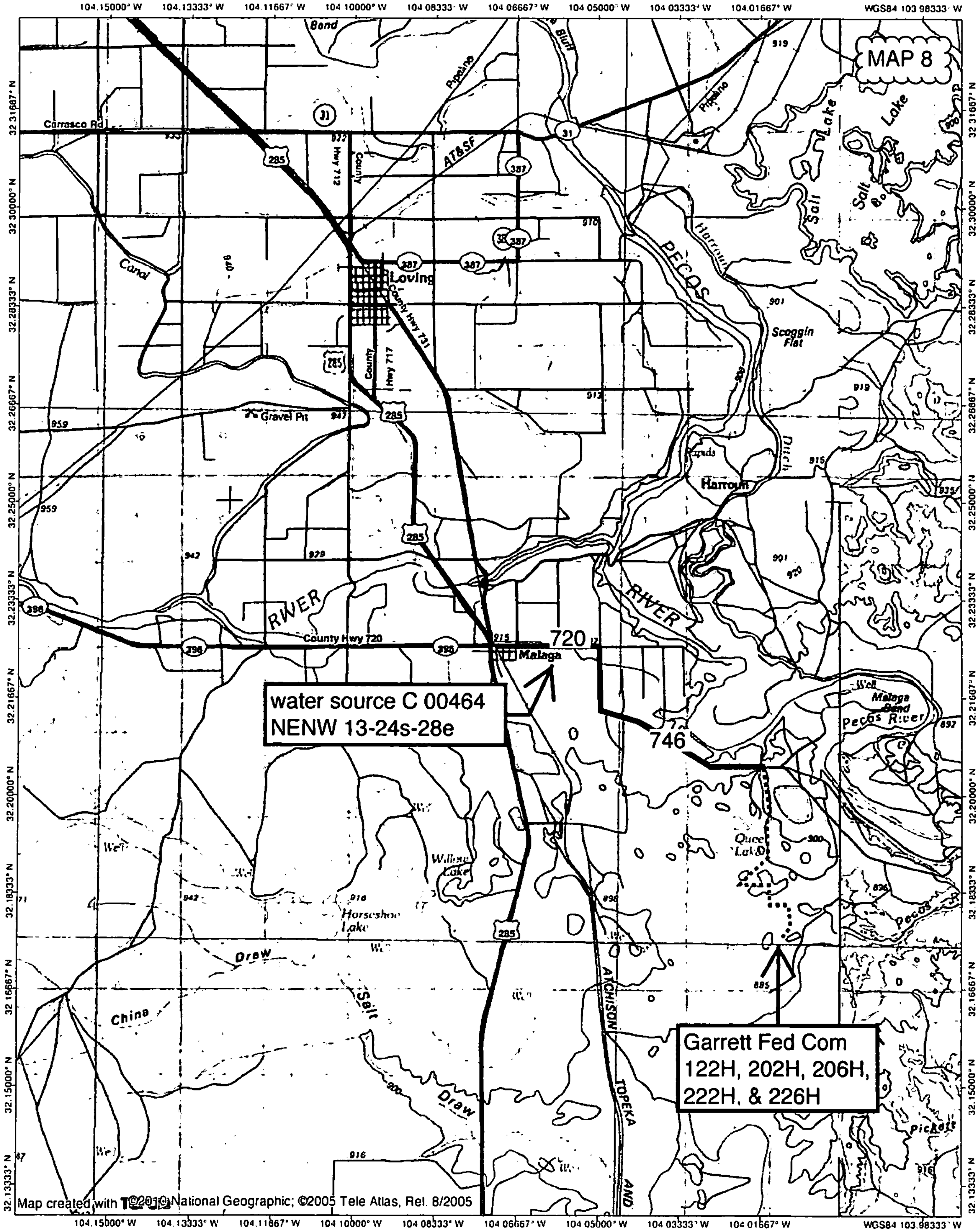
TOPO! map printed on 01/15/18 from "Untitled.tpo"



NATIONAL GEOGRAPHIC

0.0 0.5 1.0 1.5 2.0 2.5 3.0 miles

0 1 2 3 4 5 km

TN MN 7°

01/15/18

MAP 9

SECTION 32, TOWNSHIP 24S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

PROPOSED ROAD LINE TABLE

LINE	BEARING	DISTANCE
7	S 73°42'05" W	89.05'
8	S 78°56'51" W	354.43'
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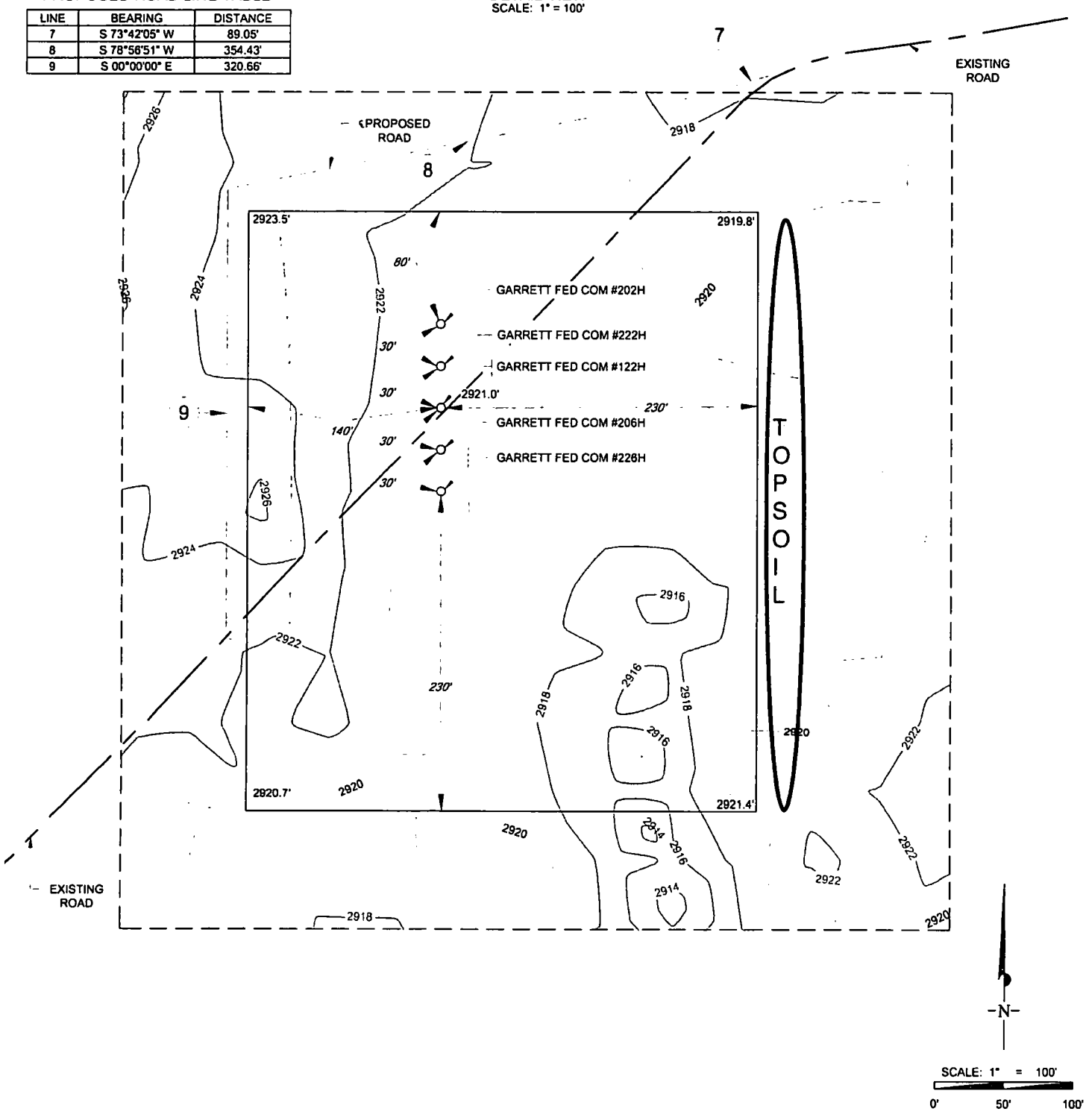
DETAIL VIEW
SCALE: 1" = 100'



-N-

SCALE: 1" = 100'
0' 50' 100'

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET

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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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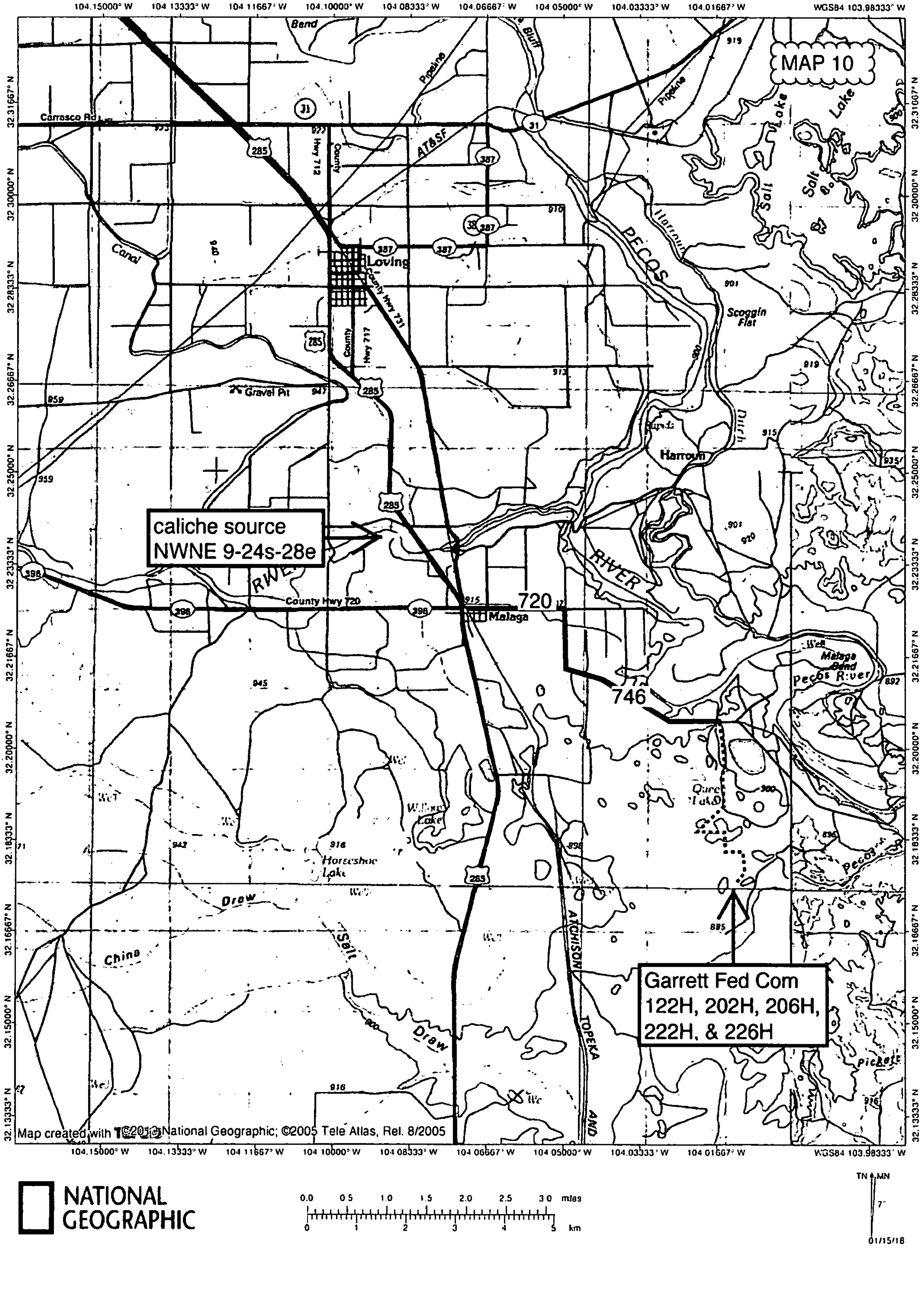
S:\SURVEY\MATADOR_RESOURCES\GARRETT_FED_COM_122H\FINAL_PRODUCTS\LO_GARRETT_FED_COM_122H_REV3.DWG 10/13/2017 12:58:43 PM ccaston

TOPO! map printed on 01/15/18 from "Untitled.tpo"



NATIONAL GEOGRAPHIC

Matador PRODUCTION COMPANY

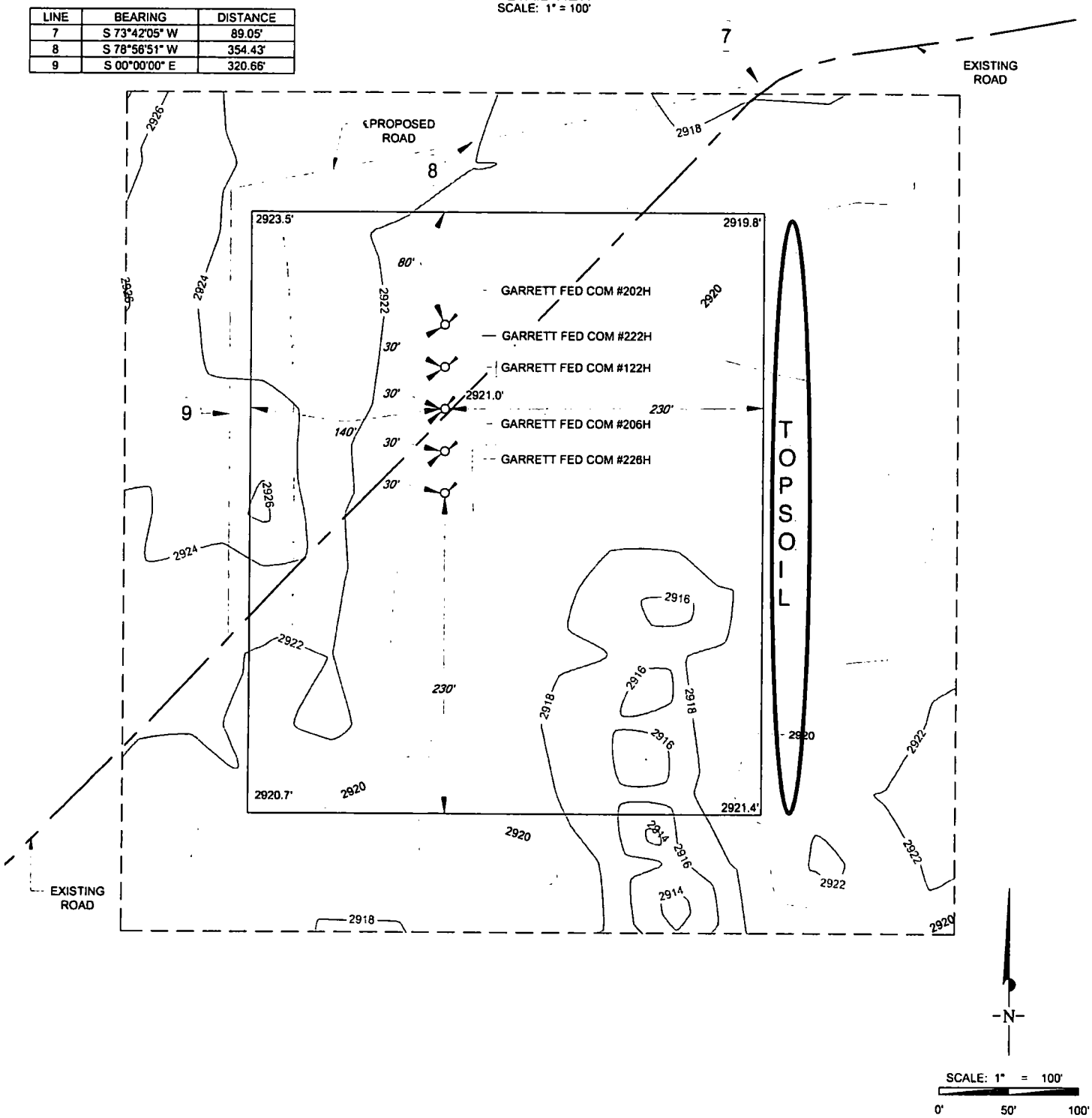
MAP 9

SECTION 32, TOWNSHIP 24S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

PROPOSED ROAD LINE TABLE

LINE	BEARING	DISTANCE
7	S 73°42'05" W	89.05'
8	S 78°56'51" W	354.43'
9	S 00°00'00" E	320.66'

DETAIL VIEW
SCALE: 1" = 100'



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S:\SURVEY\MATADOR_RESOURCES\GARRETT_FED_COM_122H\FINAL_PRODUCTS\LO_GARRETT_FED_COM_122H_REV3.DWG 10/13/2017 12:58:43 PM ccaston

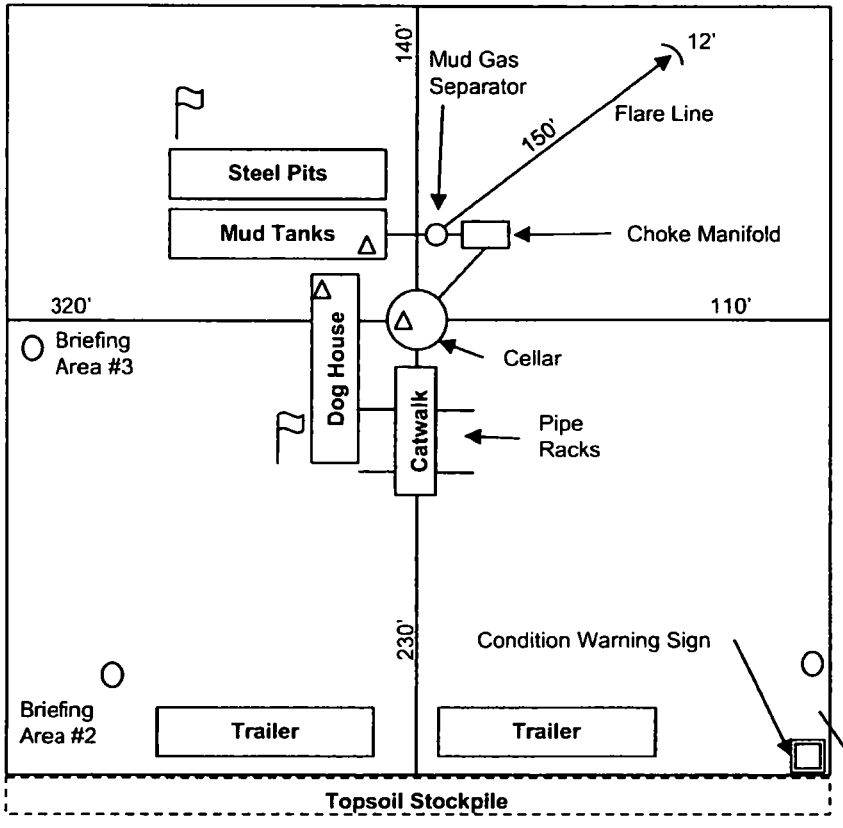
Rig Diagram

Garrett Fed Com 226H
SHL 2372' FNL & 584' FWL
32-24S-29E Eddy County, NM
(not to scale)

Wind Direction Indicator

H2S Monitors

Briefing Areas



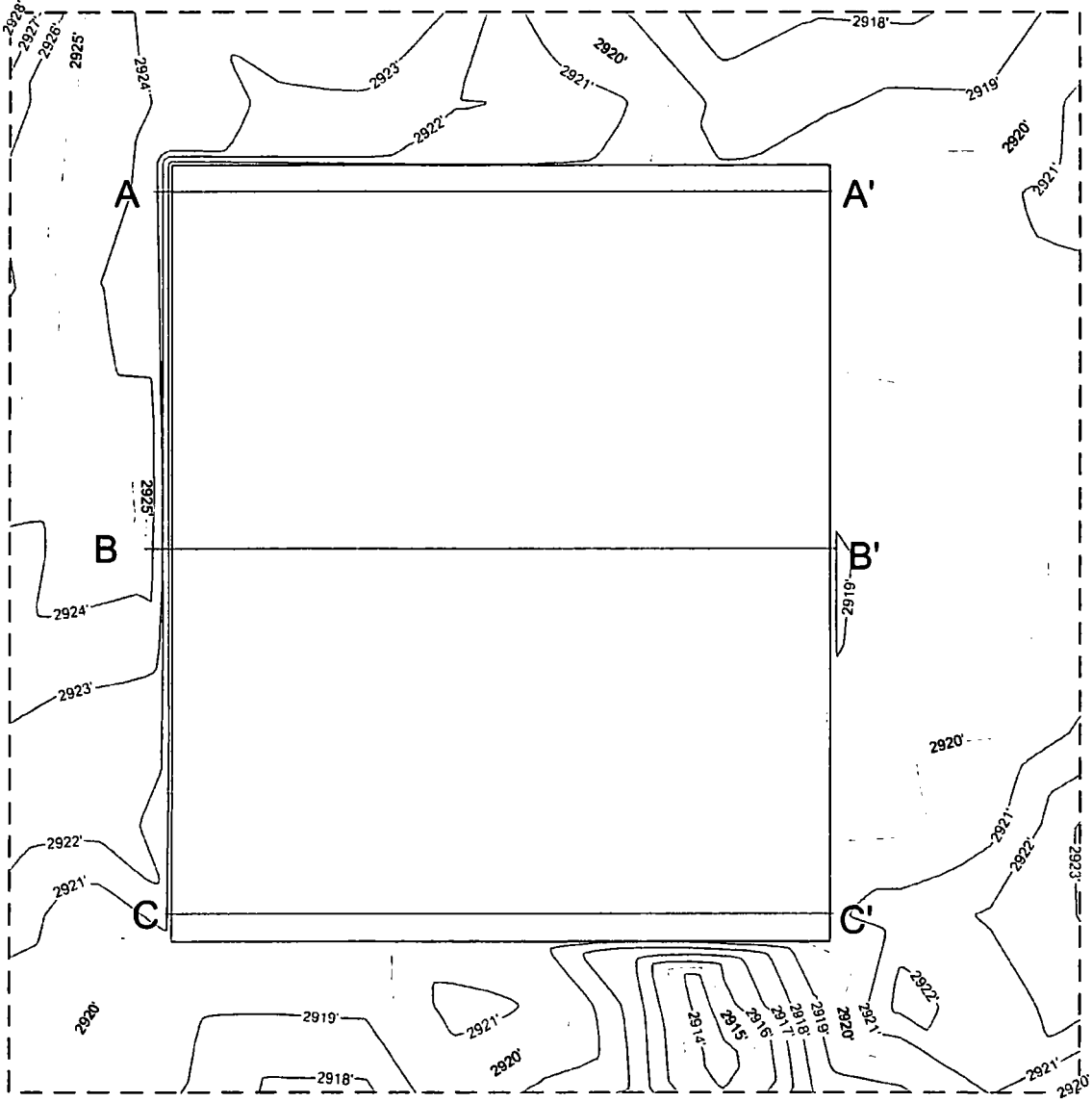
Prevailing Winds → North

SCALE: 1" = 100'

0' 50' 100'

SECTION 32, TOWNSHIP 24-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

MAP 12



MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Matador PRODUCTION COMPANY

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TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM

Michael Blake Brown, P.S. No. 18329
SEPTEMBER 01, 2017
Field note description of even date accompanies this plat.

GARRETT FED COM #122H SURFACE PAD SITE PROFILE	REVISION:	
	GJU	08/22/17
	MML	08/30/17
DATE: 06/05/17		
FILE: CD GARRETT_FED_COM_122H_SURFACE_PAD_SITE_REV2		
DRAWN BY: EAH		
SHEET: 1 OF 2		

NOTES:
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3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY MATADOR PRODUCTION COMPANY. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.

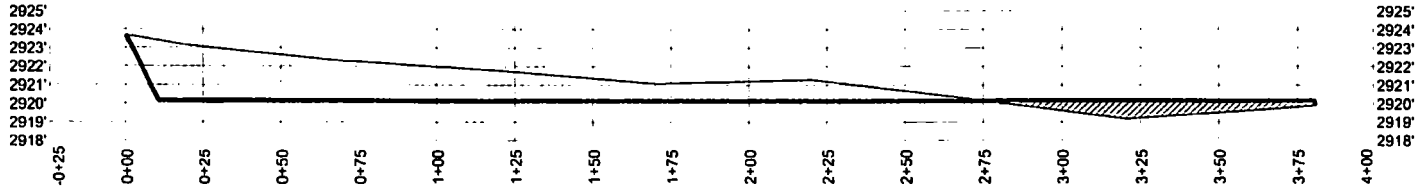
TOP OF PAD ELEVATION: 2920.1540
CUT SLOPE: 33.33% 3.000:1 18.43°
FILL SLOPE: 33.33% 3.000:1 18.43°
BALANCE TOLERANCE (C.Y.): 0.00
CUT SWELL FACTOR: 1.00
FILL SHRINK FACTOR: 1.00

PAD EARTHWORK VOLUMES
CUT : 124,788.4 C.F., 4,621.79 C.Y.
FILL: 124,788.4 C.F., 4,621.79 C.Y.
AREA: 167540.1 SQ.FT., 3.846 ACRES

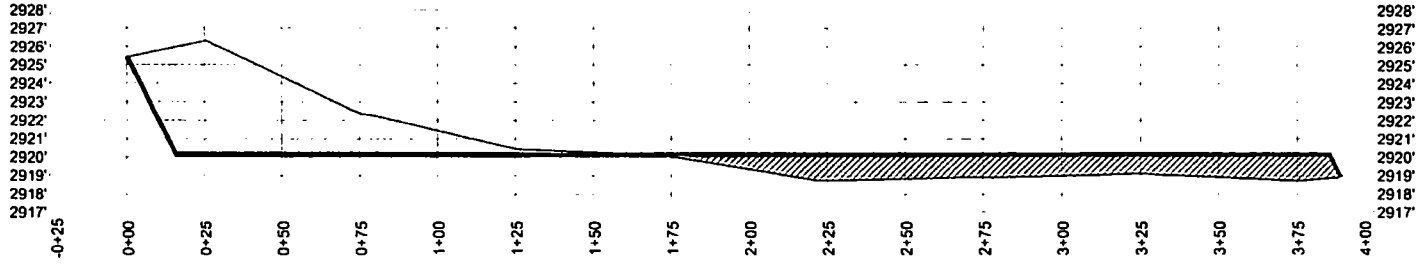
SECTION 32, TOWNSHIP 24-S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

Matador PRODUCTION COMPANY

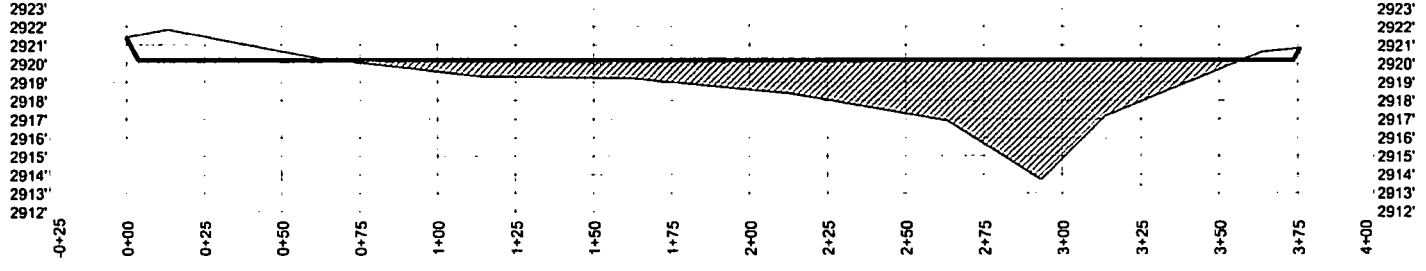
A-A'



B-B'



C-C'



Horizontal Scale = 1:60
Vertical Scale = 1:5

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GARRETT FED COM #122H SURFACE PAD SITE PROFILE	REVISION:	
	GJU	08/22/17
	MML	08/30/17
DATE: 06/05/17		
FILE: CD GARRETT FED COM 122H SURFACE PAD SITE REV2		
DRAWN BY: EAH		
SHEET : 2 OF 2		

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MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

MAP 13

Michael Blake Brown, P.S. No. 18329
SEPTEMBER 01, 2017
Field note description of even date accompanies this plat.

S:\SURVEY\MATADOR_RESOURCES\GARRETT_FED_COM_122H_SURFACE_PAD_SITE\FINAL_PRODUCTS\CD_GARRETT_FED_COM_122H_SURFACE_PAD_SITE_REV2.DWG 9/1/2017 10:11:50 AM mlewin

Matador PRODUCTION COMPANY

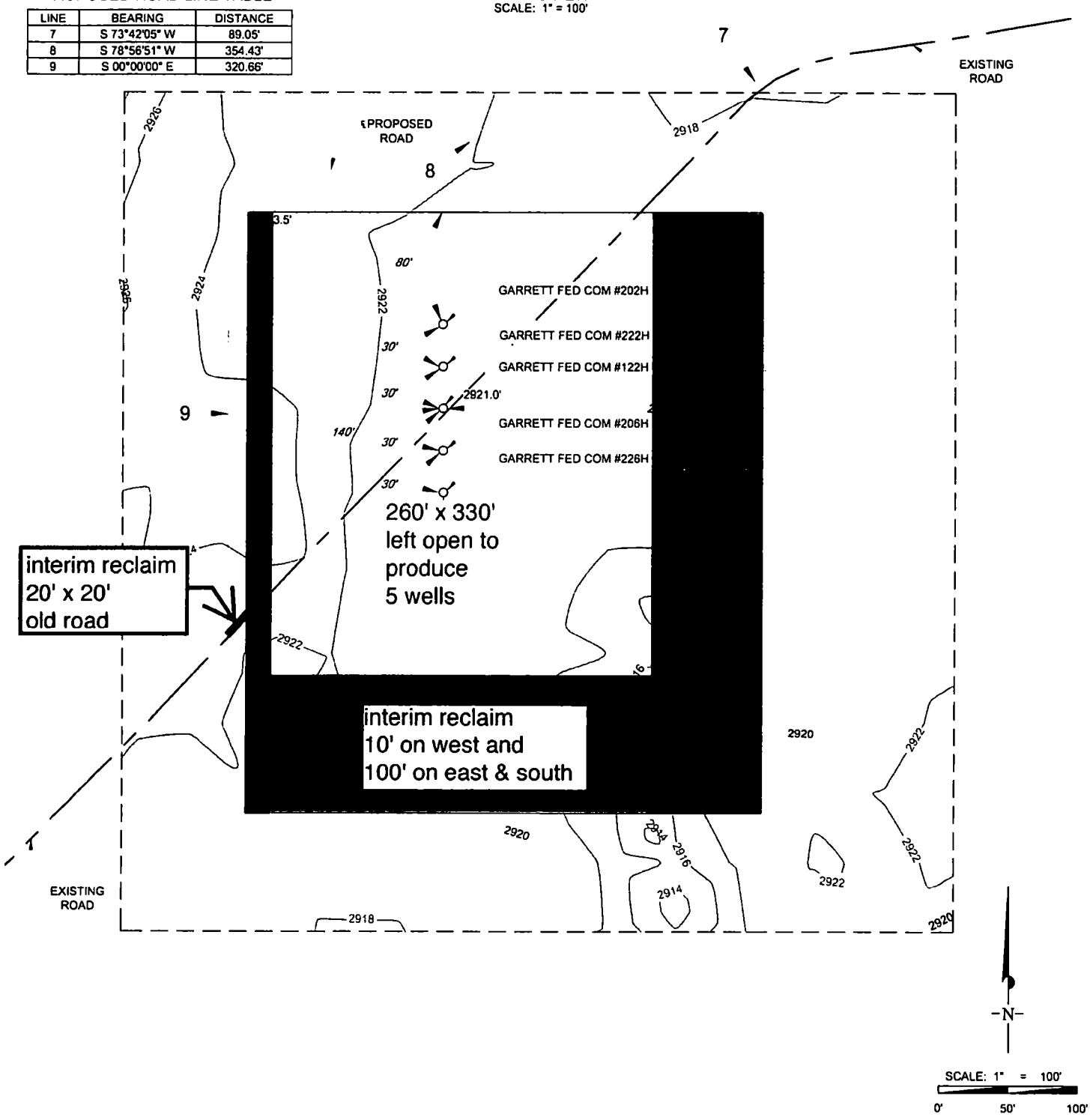
MAP 11

SECTION 32, TOWNSHIP 24S, RANGE 29-E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

PROPOSED ROAD LINE TABLE

LINE	BEARING	DISTANCE
7	S 73°42'05" W	89.05'
8	S 78°56'51" W	354.43'
9	S 00°00'00" E	320.66'

DETAIL VIEW
SCALE: 1" = 100'



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ORIGINAL DOCUMENT SIZE: 8.5" X 11"

Surface Use Plan

1. ROAD DIRECTIONS & DESCRIPTIONS (See MAPS 1 - 4)

From the junction of US 285 & NM 396 in Malaga, NM...
Go E 1-1/3 miles on paved County Road 720
Then turn right and go SE 2.9 miles on paved County Road 746
Then turn right and go SW 1.5 miles on a caliche road
Turn left after crossing a cattle guard
Then go E, SE, S, and SW 1.3 miles on a caliche road directly onto the pad

Non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed.

2. ROAD TO BE BUILT OR UPGRADED (See MAP 4)

No new road is needed to access the pad. However, the pad will block the existing road that crosses the pad. That road provides access to Chevron and Judah oil wells in Section 31. A 764.14' permanent detour will be built north and west of Matador's pad. The 764.14' of new resource road will be crowned and ditched, have a 14' wide driving surface, and be surfaced with caliche. Maximum disturbed width = 30'. Maximum grade = 4%. Maximum cut or fill = 3'. No culvert, cattle guard, or vehicle turn out is needed.

Detour borrow ditch will be frequently riprapped to slow discharge. If riprap is unavailable, then sand bags will be used. Straw wattles and geotextile fabric will not be used.

Upgrading will consist of patching potholes with caliche along the quarter-mile of road south from Matador's existing well in NWNW Section 32.

3. EXISTING WELLS (See MAP 5)

Existing oil, gas, water, disposal, and P & A wells are within a mile. No injection well is within a mile radius.

4. PROPOSED PRODUCTION FACILITIES (See MAPS 6 & 7)

An existing tank battery on Matador's Garrett Fed Com 221H pad in NWNW 32-24s-29e will be used. Matador will bury 7 pipelines between the 202H pad and 221H pad. Five of the pipelines will be 3" O. D., X42 carbon steel, Schedule 80, MAOP 1440 psi, flow lines. Sixth pipeline will be a 2" O. D., X42 carbon steel, Schedule 80, MAOP 1440 psi, gas lift supply line. Seventh pipeline will be 8.625" O. D., steel, 1.232" WT SDR-7, MAOP 200 psi, produced water pipeline. No power line is needed given the gas lift supply line. Pipelines will be buried with $\geq$48" of cover in a 75' x 2,047.64' long corridor.

5. WATER SUPPLY (See MAP 8)

Water will be trucked via existing roads from existing water well C 00464 on private land in NENW 13-24s-28e.

6. CONSTRUCTION MATERIALS & METHODS (See MAPS 9 & 10)

NM One Call (811) will be notified before construction starts. Top $\approx$6" of soil and brush will be stockpiled east of the pad. V-door will face east. Closed loop drilling system will be used. Caliche will be hauled from an existing caliche pit on private (Calderon) land in NWNE 9-24s-28e. A berm will be built around the fill sides of the pad.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to a state approved disposal site, e. g., Petro Waste Environmental LP at Orla, Texas. (Texas Railroad Commission permit number STF-0101, P012234, P012236.) Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, and mud logger.

9. WELL SITE LAYOUT (See MAP 9)

Also see Rig Layout diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

10. RECLAMATION (See MAPS 11 - 13)

Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad ≈52% (1.91 acre) by removing caliche and reclaiming the west (10'), south (100'), and east (100') sides. A 20' dead end road on the west side of the pad will also be reclaimed. This will leave 1.74 acres for producing 5 wells and tractor-trailer turn around. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the State Land Office's requirements.

Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. Once the last well is plugged, then the rest of the pad and 764.14' of new road will be similarly reclaimed within 6 months of plugging. The old road will be re-opened. Noxious weeds will be controlled.

Land use:

75' x 2047.64' pipeline route = 3.53 acres
30' x 764.14' detour road = 0.53 acre
+ 370' x 430' pad = 3.65 acres
7.71 acres short term
- 75' x 2047.64' pipeline route = 3.53 acres
- 20' x 20' road = 0.01 acre
- 1.91 acre interim reclamation pad
2.26 acres long term (0.53 ac. road + 1.73 ac. pad)

11. SURFACE OWNER

All construction will be on NM State Land Office land. Their address is PO Box 1148, Santa Fe, NM 87504. Phone is 505 827-5760. APD approval by NMOCD will constitute surface use approval under the terms of NM State Land Office lease VB-0055-0000.

12. OTHER INFORMATION

On-site inspection was held with Jim Goodbar, Vance Wolf, et al (BLM) on August 24, 2017. Boone filed archaeology report NMCRIS-138845 on August 29, 2017.

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 21st day of January, 2018.

Brian Wood, Consultant
Permits West, Inc.
37 Verano Loop, Santa Fe, NM 87508
(505) 466-8120 FAX: (505) 466-9682 Cellular: (505) 699-2276

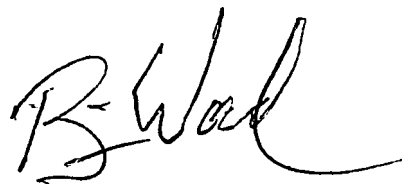
Field representative will be:

Sam Pryor, Senior Staff Landman
Matador Production Company
5400 LBJ Freeway, Suite 1500
Dallas TX 75240
Phone: (972) 371-5241
FAX: (214) 866-4841

January 21, 2018

To Who It May Concern:

All (pad, road, pipelines) construction will be on NM State Land Office land. Their address is PO Box 1148, Santa Fe, NM 87504. Phone is 505 827-5760. In this situation where NMSLO oil and gas lease VB-0055-0000 will be communitized, then surface use is authorized when NMOCD approves the APD.



Brian Wood

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

07/19/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001079

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: